

July 1940

TECHNOLOGY REVIEW

Title Reg. in U. S. Pat. Office



technology review

Published by MIT

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MAIL RETURNS

Ciphers

FROM CHARLES L. SHEDD, '02:

I was very much interested in the article in the June Review by Mr. A. H. Phillips, entitled, "Cipher for Secrets." As a boy in school I began to take an interest in the subject and, with a chum, invented a cipher which had several hundred characters in its alphabet and which we could write and read practically as readily as we could English. We protected ourselves from any demand from a teacher to translate our notes by a solemn promise to each other not to give any one our secret, and of course no honorable teacher would insist on our breaking such a promise. This cipher is still used by me for making notes and has been especially helpful in writing down impressions made by any one who came to me to have an interview.

Years afterwards I worked for one summer on ciphers for Mr. C. P. Bowditch, using a treatise on ciphers written by a certain Gustavus Selenus, who was supposed to have really been Francis Bacon, who was an English expert on ciphers. This work was in connection with the Shakespeare-Baconian controversy but led to no results of any value. However, in the World War the newspapers publicised a cipher used by the Germans, in which the picture of a beehive figured, with bees flying about in the air. This was in principle the same as a cipher pictured by Gustavus Selenus.

Using Vigenère as a basis, I invented a cipher which to my mind is much more difficult to solve. Here are some examples, the solutions for which will be found in this letter *if found at all*:

Ewg Zyfuqures xa je.

Fzcije Recenp Zwe.

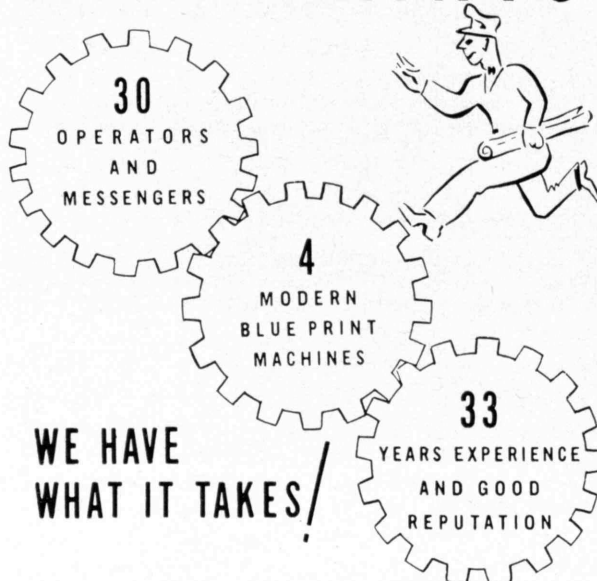
Kiezepwavyazg.

Vnvij vy iy eriguhaiwegunvsus Qfze.

I think that any one who tries to solve these quotations written in cipher will first be interested in the fact that my statement that the solutions are in this letter will give very little, if any, help.

Arlington, Mass.

BLUE PRINTS

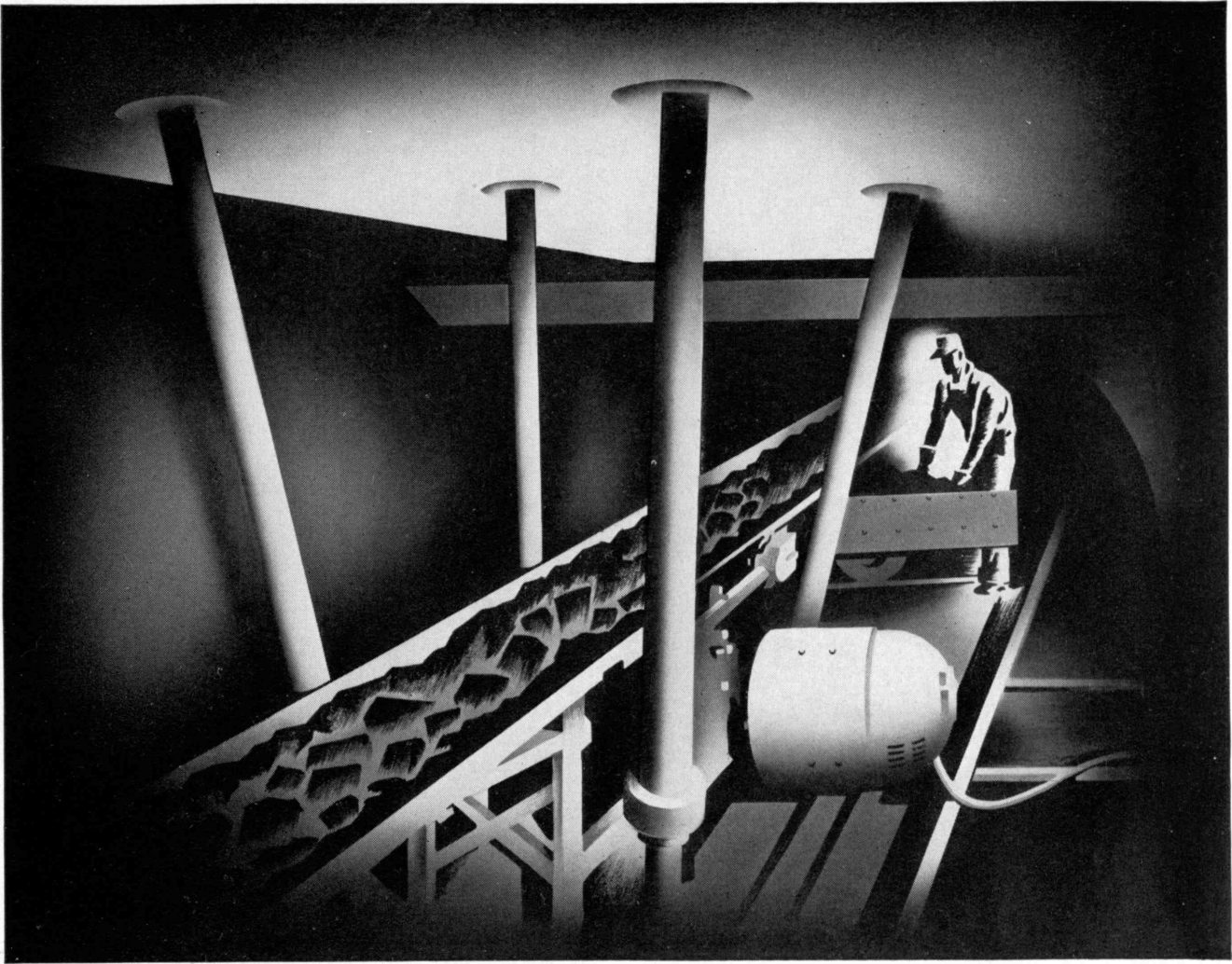


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A. L. Weil '01



MEETING A SERVICE CHALLENGE

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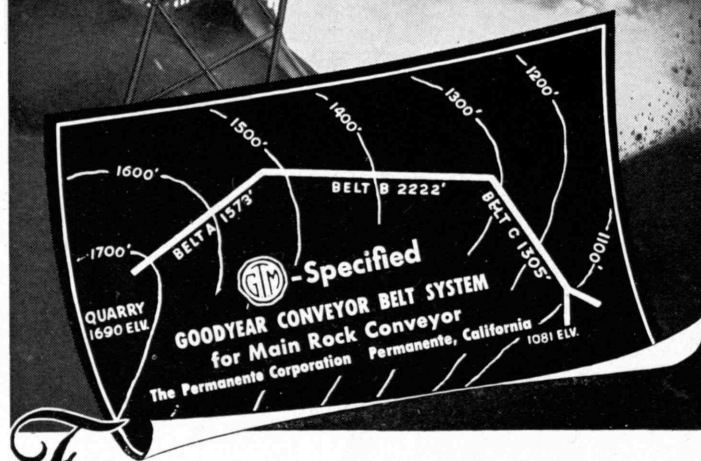
If anywhere in a product there is a part which presents special difficulties it often pays to investigate the possibilities of Molybdenum steels. Complete data will be found in our technical book, "Molybdenum in Steel," which is sent free to interested technical students on request.

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It's Moving a Mountain a Mile

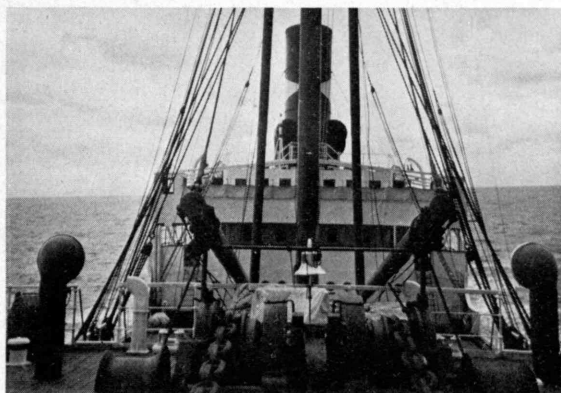
— with the help of the G. T. M.



From high up a rugged California mountain comes the stream of limestone rock you see here cascading from the end of a Goodyear conveyor belt—one of the most remarkable belt hauls in the world. Built to transport millions of tons of rock to be used in manufacturing cement for the gigantic Shasta Flood Control Dam, the conveyor winds up and down the sides of the mountain, swooping up-hill and down-dale like a great roller coaster. Under impetus of a 700-ton-per-hour down-hill load the belts drive generators that supply

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THE GREATEST NAME IN RUBBER
GOOD YEAR



Marine
retrospect

Jane Cook

THE TECHNOLOGY REVIEW

Title Reg. U. S. Pat. Office

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

VOL. 42, NO. 9

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PUBLISHED MONTHLY FROM NOVEMBER TO JULY INCLUSIVE ON THE TWENTY-SEVENTH OF THE MONTH PRECEDING THE DATE OF ISSUE AT 50 CENTS A COPY. ANNUAL SUBSCRIPTION \$3.50; CANADIAN AND FOREIGN SUBSCRIPTION \$4.00. PUBLISHED FOR THE ALUMNI ASSOCIATION OF THE M.I.T. HENRY E. WORCESTER, PRESIDENT; A. WARREN NORTON, JOHN E. BURCHARD, VICE-PRESIDENTS; CHARLES E. LOCKE, SECRETARY; RALPH T. JOPE, TREASURER. PUBLISHED AT

THE RUMFORD PRESS, 10 FERRY STREET, CONCORD, N. H. EDITORIAL OFFICE, ROOM 3-219, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE A. MASS. ENTERED AS SECOND-CLASS MAIL MATTER AT THE POST OFFICE AT CONCORD, N. H. COPYRIGHT, 1940, BY THE ALUMNI ASSOCIATION OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY. THREE WEEKS MUST BE ALLOWED TO EFFECT CHANGES OF ADDRESS. BOTH OLD AND NEW ADDRESSES SHOULD BE GIVEN.



WINGS so swift that the eye cannot perceive their motion, and iridescent color of jewel-like values that cannot be fully sensed when the bird is hovering have here been fixed for admiration through the stroboscopic photography of Harold E. Edgerton, '27, and the four-color lithography of The Forbes Lithograph Company of Boston, of which William S. Forbes, '93, is president. The exposure: $1/30,000$ second on Kodachrome.

THE TECHNOLOGY REVIEW

Vol. 42, No. 9



July, 1940

The Trend of Affairs

Doctor Diet

THE announcement that an African copper-mining company's experiments in feeding its native workers have improved not only the laborers' health but also the company's balance sheet, throws a sharp side light on the general economic value of adequate nutrition. Doctors have for a long time maintained that a sound diet is fundamental to a vigorous and healthy existence. Because of the difficulties that ordinarily face a private or, for that matter, a public, institution when it attempts to interfere with people's food habits, however, the improvement of worker efficiency by improved diet is not yet important personnel work.

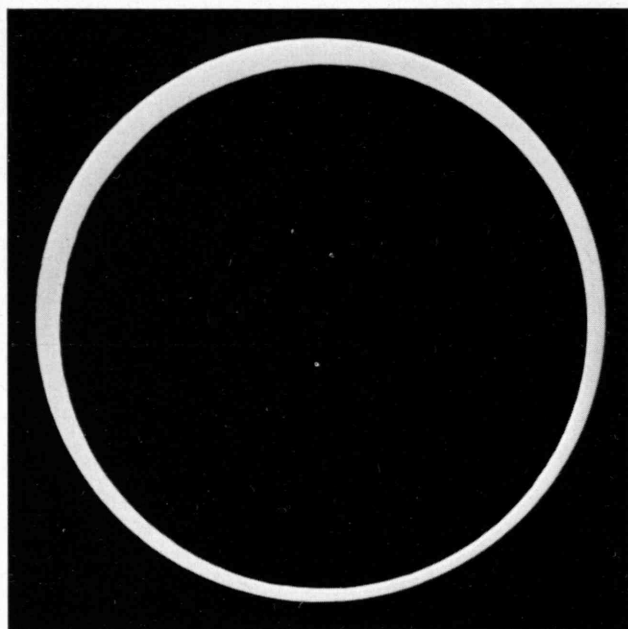
Yet only 10 per cent of the time lost by American employees is lost by reason of accidents or diseases acquired within the plant. The copper-mining company, for instance, after three years of observations that are still in progress, found that its native laborers almost doubled their working capacity and resistance to disease when fed a balanced diet, which differed from the natives' usual food most sharply in the amount of animal protein it contained. Ordinarily the natives subsist on starchy foods like maize, millet, and cassava.

It is stated that a native worker ordinarily has but half the capacity for work and a third the resistance to disease of a white man in the same environment, but, naturally, many factors other than diet are involved here. Still, the chairman of a Royal Commission which investigated this and other aspects of life in South Central Africa has stated flatly that "the scientific feeding of a qualitatively starved native with a balanced ration and of his wholly starved land with humus, coupled with the suppression of the tsetse fly and the concomitant greater availability of bovine meat would solve — directly or indirectly — nine-tenths of the crying problems of South Central Africa."

In our own country, effects of grossly inadequate diets do not intrude so emphatically on industrial consciousness, and attention tends to focus on specific deficiencies brought out by unusual working conditions, such as high temperature and its accompanying cases of heatstroke. This problem was solved when a steel company found that workers who drank beer were far more resistant to heatstroke than those who abstained completely or those who went in for stronger beverages. Further inquiry disclosed that it was not the beer but the salt the men shook into it and absorbed with their pretzels that did the trick. Workers who lose large amounts of perspiration, which is slightly saline, need extra salt in order to keep the concentration of that substance in the blood at the proper level for health and efficiency.

Diet has also solved inspection and matching difficulties encountered in the manufacture of colored articles, such as porcelain-coated sheets. In differentiating among colors, the eyes draw on their supply of visual purple, which is replenished only with the aid of vitamin A. Drastic drops in rejections have followed the feeding of foods or concentrates rich in this vitamin to inspectors suffering from eye fatigue.

More directly concerned with the problems of fatigue are the studies on how various foods and eating habits affect muscular efficiency. A diet rich in carbohydrates, for example, permits higher muscular efficiency than one rich in fats. It also appears that a man can create muscular energy more efficiently after a meal than when hungry. In an experiment on factory workers doing light, repetitive work, it was found that workers eating five meals a day could produce 10 per cent more than workers eating the traditional three. The argument is also presented that five is no more or less an arbitrary number than three, and that it is large rather than frequent meals that hinder digestion.



United States Army Air Corps

The sun in eclipse as seen from an airplane at 35,600 feet over Jacksonville, Fla., at 5:07 P.M. on May 7. The temperature at that altitude was 33 degrees below zero. As far as is known, this is the highest picture of an eclipse yet taken.

Except that they might be confused by verbiage high in vitamins, carbohydrates, and calories, our ancestors would not be surprised at the results of better feeding: They always said that diet cures more than doctors.

New Needs, "New" Metals

TECHNICAL developments have a way of turning up work for materials which appeared to be of little if any practical value when they first became available. Such elements as tungsten, molybdenum, manganese, and chromium, for instance, were once curiosities; modern steel manufacture has translated them from that dubious state into positions of importance and value as alloying agents. The story of aluminum is an even stronger illustration of the point; when processes of recovery permitted its production on a commercial scale, uses had to be invented for it. How effectively that invention was carried out needs no elaboration.

Times of international stress often concentrate this kind of development, as they necessitate both the utilization of substitutes for conventional materials and the exploitation of accessible but low-grade resources which in ordinary eras would be ignored.

Interest hence attaches to a way of recovering metals from low-grade ores which for some years has engaged H. C. Weber, '18, Associate Professor of Chemical Engineering at the Institute, and has been brought to pilot-plant application in the extraction of boron. Professor Weber has also used the method in extraction of beryllium, zirconium, titanium, and tungsten on a laboratory scale. Some important uses for this group of metals are already known; technical advances, military exigency, and the availability of workable supplies of the metals themselves might be expected to disclose others.

Beryllium is used, for example, in an alloy with copper for springs which must carry electric current, as well as for switch contacts and similar parts. Zirconium, for which but little application has been found until very recently, now appears as a plating on the anode of certain radio tubes. Boron itself is extremely hard, the metal in the pure state scratching glass. It is also resistant to corrosion and might therefore be used as a plating to give other metals a hard corrosion-resisting surface.

Titanium tetrachloride is used in military smoke screens laid down by airplanes. Boron trichloride, which can be made inexpensively by Professor Weber's process, as can titanium tetrachloride, conceivably might be used in the same way. By the hydrolyzing of titanium chloride, titanium oxide — valuable as a pigment in paint — is readily produced.

Low-grade ores of these metals are available in this country; in them, concentration of the mineral itself is often pretty low. Beryllium, for instance, makes up only about 6 per cent of beryl, the ore in which it is found. For such ores the Weber process appears to be especially applicable, since it permits "boiling out," as a chloride, the desired small fraction of metal and easily discarding the unwanted large residue.

Essentially, the new process consists of an improved, simplified technique by which the metal is volatilized as a chloride directly from the ore. The ground ore is mixed with carbon, and chlorine or hydrochloric acid gas is passed over the mixture, bringing the metal off as a chloride which is then reduced. Practically complete recovery of the chlorine is possible, and the apparatus involved is very simple. Controlling the ore-carbon mixture permits operation at relatively low temperatures and thus obviates the expense of attaining and maintaining high heat levels, as well as the expense of the corrosion-resistant apparatus which would be necessary under high-temperature operation. In this respect, the method is an advance over earlier chlorination processes.

Roll Call

IN the opinion of a learned national committee, a century and a half of the United States patent system have witnessed at least nineteen inventions about whose basic importance there is close agreement, the choice being limited to patents which have now reverted to the public.

Seven of these inventions were concerned with communication, if we use the word in its broadest sense as signifying the interchange of thought; three either revolutionized or founded means of transportation; and half are credited with having laid the foundations upon which new industries have subsequently been erected.

The list: air brake, airplane, production of aluminum, cotton gin, incandescent lamp, induction motor, Linotype machine, motion-picture projector, oil cracking, phonograph, reaper, sewing machine, steamboat, telegraph, telephone, thermosetting plastics (of which Bakelite is an example), three-electrode vacuum tube, typewriter, and vulcanization of rubber.

Astronomers' Aluminum

MIRRORS upon which astronomers depend to concentrate the faint light of distant stars for study are the essential element in astronomy, for upon their reflective powers depends the ability of observatory telescopes to bring to the photographic plate record of what goes on in the sky. Thin films of silver on accurately ground glass surfaces are effective mirrors, but even more effective are films of aluminum. Silver's reflectivity is as high as 90 per cent in the visible range, but in a few months it drops off to 60 per cent of the original value because of tarnishing. Aluminum, on the contrary, retains its initial reflectivity of 88 per cent for a much longer period, and has the added value of a 60 per cent reflectivity in the ultraviolet, where silver drops to but 8 per cent.

For these reasons, there is interest in the success recorded for apparatus built at the Institute to evaporate aluminum on mirrors for Technology, for Harvard Observatory, and for other institutions. Already Harvard astronomers have aluminized fourteen mirrors — including two of 60-inch diameter — in the high-vacuum stainless-steel tank housing filaments from which the aluminum is evaporated.

Constructed under the direction of John Wulff, Associate Professor of Physical Metallurgy at Technology, the evaporating apparatus stands 9 feet high, the tank having a volume of 175 cubic feet. For the evaporation of metals essential to the depositing of the thin film necessary in manufacturing mirrors, high vacuums must be maintained. Hence the tank is of welded construction and can be brought to a vacuum of 10^{-2} millimeters of mercury in half an hour by means of a mechanical pump. In two hours, a vacuum of 10^{-6} millimeters of mercury is attained, with aid of a diffusion pump but without the use of a refrigerant, and the rate of leakage is so small that after twenty-four hours a vacuum of 10^{-5} millimeters of mercury is maintained. Tracking down and repairing pores in the welds holding the stainless-steel sheets together was the slowest part of the construction of the apparatus and had to be done painstakingly

to make possible the holding of the vacuums. Working vacuums such as these are clearly to be rated as in the skilled-artisan class; the ordinary radio tube, for instance, is evacuated to a pressure of 10^{-3} or 10^{-5} millimeters of mercury. In the aristocracy of experimental vacuums, which are secured in closed glass systems with the aid of absorbents and refrigerants, a vacuum of 10^{-8} millimeters of mercury heads the list.

Evaporation is carried out from seventy-two tungsten filaments charged with aluminum. These are arranged on the periphery of the disk to be aluminized and at the distance above the mirror necessary to produce a film of uniform thickness. All the filaments can be evaporated of their charge to make an opaque aluminum coating in from two to four hours, during which the evacuating pumps are kept in operation.

The glass disks themselves must be carefully cleaned before being treated if the mirror is to be durable. After being cleansed and dried, the disks are placed in the tank and are bombarded by positive ions in a partial vacuum for a time, in order to free the surface of residual adsorbed films. Then the tank is evacuated to the best vacuum possible, and evaporation is started.

The apparatus built and set up in the Harvard Observatory comprises a tank six and a half feet in diameter and five feet high. A smaller outfit with a 30-inch tank is installed at Technology and has been employed in researches on the evaporation of metals and the coating of surfaces. Deposition of silver coatings on sheet steel with or without intermediate layers of plastics is a subject of particular interest, and research done on it with this apparatus at Technology has provided data serving as the basis of a large developmental project at the Bureau of Standards. The 30-inch tank is also being used to make extremely fine aluminum powder for use in silicosis therapy and to produce special surface treatments on steel and other alloys. Other evaporating tanks of the same pattern and purpose exist in California, where a 100-inch tank has been built and a 200-inch one is in construction. In Michigan and in Texas, 72-inch tanks have also recently been built for aluminizing.

George W. Goddard, major in the Army Air Corps and chief of its photographic laboratory, with the 60-inch telephoto aerial camera used in taking the high-altitude eclipse photograph shown opposite. A filter was used, with lens stopped at f:32 and shutter at 1/300 second.



United States Army Air Corps

Night Landings on Water

A SYSTEM of radio-controlled fluorescent lights mounted on rubber floats to outline landing areas for seaplanes on ocean, lake, or river was tested recently on the Anacostia River by the Civil Aeronautics Authority. The new lighting system is said to have the advantages of an economical battery-operated light source, a supporting float which would not be hazardous to navigation, and remote control by radio. The lights may be arranged on water in lines to indicate a seadrome, in the same manner as boundary and contact lights are used on a land airport. For large seadromes several "runways" can be outlined on the water, so that a plane landing from any direction can head into the wind. Thus at permanent bases, where extensive operations would be necessary, lines of lights could define several lanes 500 feet wide. For temporary or remote bases, where portable equipment might be used, one row of lights would be considered sufficient.

The contact lights would be in three colors — red, green, and gold — giving the pilot positive indication of his progress down the runway. The system calls for two green lights at the approach to the landing lane, with the remainder of the line in gold except for two red lights marking the end. In addition to the lane contact lights, seadrome boundary lights flashing red would be floated about 1,000 feet apart as a warning to ships that the space is restricted for planes. These lights would be kept burning all night for emergency landings.

The light source to be used in this system is a fluorescent lamp of high efficiency, powered by lightweight dry-cell batteries. The electrical system has a low battery drain, and it is said that a steadily burning contact light would operate for sixty days if illuminated for a nightly average of five one-hour periods. The flashing red boundary units are estimated to be good for 2,500 hours of continuous operation.

The rubber floats for these lights are in the form of large doughnuts, with vertical black and yellow stripes for daylight identification. The floats are inflated with air only slightly above atmospheric pressure, which small amount of inflation has the advantage of keeping them stable in choppy seas. Stability is also increased by the structure of the walls of the floats, which change in shape to meet the shifting stresses caused by passing waves. Tests included contact with fast boats, which revealed that the resiliency of the floats minimizes the possibility of damage by collision.

The radio control of the system would permit quick selection of the proper landing lane and an indication of wind direction by manipulation of the red and green lights. The radio system is designed to operate to a distance of six miles. Each light unit contains an individual radio receiving device mounted inside a metal housing which also includes a compartment for batteries and the operating equipment of the lamps. The control signals are picked up by a small whip antenna mounted on each unit.

Interatomic Gauge Lengths

USING interatomic distances of a hundred-millionth of an inch as gauge lengths, a new x-ray method of measuring the internal stresses in a metal is under investigation by John T. Norton, '18, Associate Professor of the Physics of Metals at Technology.

The fact that it is nondestructive and can therefore be applied directly to a metal member at work as part of a machine or building, makes the new technique of distinct importance. Devised by German investigators at Stuttgart and Düsseldorf, this application of the versatile x-rays has been under study at Technology for some months, the American researchers' purpose being to test previously attained results, to seek improvements in sensitivity, and to find ways of applying the method in the welding field, where testing techniques are particularly needed.

This means of actually measuring the magnitude and direction of the principal internal stresses by consideration of a point on the surface of the metal relies upon the fact that when a metal is elastically deformed, the distances separating its atoms vary just as do the distances separating points on its surface. By measuring strain — or changes in these distances — and assuming the elastic constants known for various

metals, the investigator can readily calculate the stress. Extensometer methods hitherto used require two measurements. The first is of the specimen without load — a requirement hard to meet without dismantling a machine or tearing down a building. The second is of the specimen under load. The x-ray technique, however, requires only the second measurement, for the first which it uses — that of the interatomic distance in metals — is already known. Three x-ray diffraction pictures usually suffice, though four are necessary for a completely unknown case. The most useful application, Professor Norton feels, will be in the determination of stresses occurring in and around welded joints.



Steel in the sunlight

H. Armstrong Roberts

The Enduring Free Society

Will to Live, Sprung from Unity of Purpose among Vast Majority of Citizens, Essential in Withstanding Totalitarian Challenge; Faith in an Ideal Imperative

BY JAMES B. CONANT

THIS is not a happy June in which to listen to a baccalaureate address. And, I may add, it is not an easy time in the world's history to deliver one. A speaker on such an occasion must by tradition say something about the future, and the future, today, stands menacingly before us. As the devastating news from Europe continues to roll in, ugly questions rise to the forefront of our minds — ugly questions with far-reaching implications. The future may be very different from the past; that is the possibility which confronts us. In times like these no one can hope to play the role of prophet. Even in taking a long-range view of the years ahead, as I propose to do, no one can speak with any confidence. Events of the next few months may well make any statement of mine today preposterous.

As I have recently stated, I believe this country should give immediate and effective aid to the Allies. We should, furthermore, press forward with our comprehensive program for rearmament. These steps seem to me to be essential — essential to prevent the destruction of our hopes. But I do not propose here to discuss this problem or any problems dealing with the immediate future. Rather, I assume these pressing questions will be answered. Today, I ask you to project your minds beyond the next few years. I ask you to contemplate the future a decade or even a quarter of a century hence. And, I may remark in passing, the passage of twenty-five years will bring you only to the stage of life in which we elderly people of my generation now find ourselves. Perhaps unfortunately for us, even at our advanced age we find our task is far from done!

It is not my intention, then, to consider the immediate issues before the country. I propose, instead, to examine a fundamental question which in a sense underlies all discussion of current problems. This question is: What type of free society can endure in a mechanized world of force? Notice, please — I say free society. The adjective reveals the kernel of the question. What do we mean by free society? you may well reply. I have in mind not only the political machinery of a republican form of government based on untrammelled universal suffrage. Even more important, it seems to me, are those free institutions which insure our way of life: trial by jury, the writ of habeas corpus, free speech and assembly, freedom of the press, freedom of religion.

What type of free society can withstand the challenge of a powerful totalitarian state? The answer in general terms is obvious: Only a highly efficient, industrialized nation which has the will to live can survive in this modern, ruthless world. Let me repeat — a nation

which has the will to live. But this will to live, this determination to survive, must in turn spring from a unity of purpose among a vast majority of our citizens. There must be coherence among the inhabitants both young and old — a coherence based on a common tradition and motivated by faith in an ideal; a rational and emotional loyalty to a way of life, a type of society, which feeds the hopes and ambitions of succeeding generations of young men.

The questions which I shall raise about the future of the United States will not be primarily either political or economic; they will be questions which concern the social organization of the country. They will not involve an appraisal of the national situation at this moment but a consideration of the continuous development of our unique national life. In particular, I am going to ask you to consider what kind of a society can, on the one hand, be effective as a highly industrialized state and, on the other, preserve enough individual freedom to satisfy the needs of those nourished in our great tradition. In short, I am going to talk about both men and machines, about liberty and technology. I am going to talk about the structure of society as it develops through the generations.

Let me remind you that our modern world had its beginnings in the Fifteenth Century. Since then three concurrent developments have gone hand in hand: the rise of modern capitalism, the development of science, and the evolution of free institutions. There are a multitude of striking interconnections among these three paths of development of the Western race — industry, science, and liberalism. Without science neither a business civilization as we know it nor the social philosophy of liberalism could have come to pass. And, conversely, without liberalism science could not have blossomed and endured.

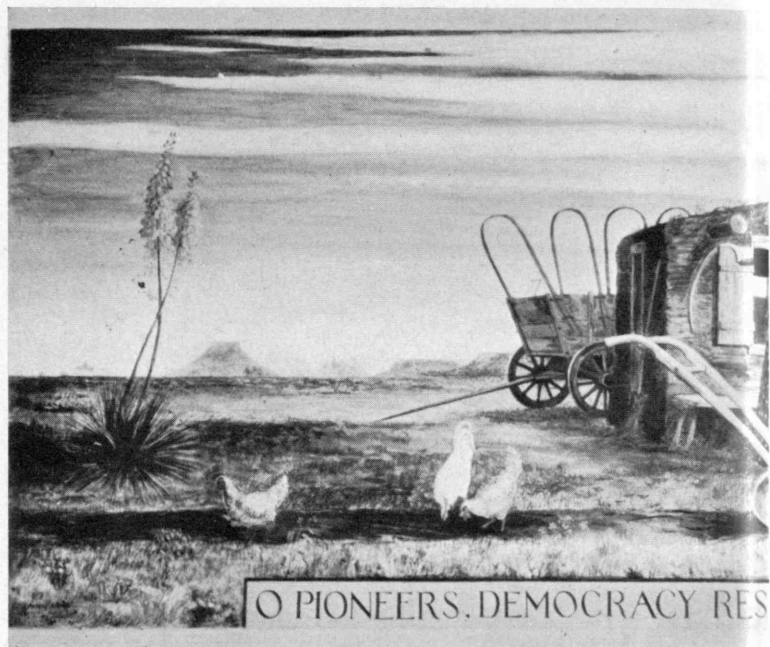
You have been educated in the sciences. A majority of you, I suppose, will enter some branch of the engineering profession. As engineers you will be working at the interface between science and society — an interface where there has been some friction, one must readily admit. This friction has been only a necessary concomitant to an essential interaction. My mechanical analogy may be false, however, for this boundary between the activities of man as a scientist and man as a social animal is dynamic. There is no stationary wall; above all, there are no impenetrable layers. The interchange across the dividing line has been rapid and significant, fruitful to science, fruitful to industry, fruitful to society. As citizens, all of you will play some

part in determining the course of events in your native lands. But as engineers, working at this interface between science and society, your task will be peculiarly important. Furthermore, as scientists, you will have a special stake in a democratic form of government, a special stake in maintaining freedom, a special stake in sustaining the pioneer.

Let us take up first the relation between science and industry, for your careers will be largely in this field. It is important to have a clear idea of the developing relationship over the years between scientific progress, on the one hand, and industrial expansion, on the other. There are some strange notions on this point. For example, a distinguished philosopher stated a few years ago that "by and large, the economic changes of recent centuries have been parasitic upon the advances made in natural science." I humbly suggest that he chose the wrong biological metaphor. If we view the history of science in relation to the history of society, we are led to characterize the relation of industry to pure science by the word "symbiosis," which means living together, not by the word "parasitism," which implies a host and a devouring parasite. I trust I am not insulting either your intelligence or your scientific training by reminding you that the common lichens on the rocks afford an example of symbiosis. A colorless plant akin to a fungus lives with a minute green unicellular organism, an alga. The green plant manufactures the food for both by photosynthesis from the air; the colorless plant lives on this ultimate source of energy but, thanks to its tough tissue, protects and stabilizes the manufacturing unit. Without *both*, we do not have a lichen. Which is more important, the fungus or the unicellular green organism? As scientists, you will all readily declare this to be a meaningless question. If you were either an alga or a fungus, however, you would feel differently about it.

As a pure observer, you can regard the vegetable world, at least, without prejudice and emotion. But when we come to the animal world, particularly the world of human activities, how different is the story. Which has been more important, the industrialist or the scientist? If this question were suddenly sprung on each of you, I would be willing to wager almost all would answer promptly. Only a few would reply that this question had no meaning. I do not know or care how many of you would favor the pure scientist and how many the businessman. My point is this: Only by an extreme effort of the will can we judge a human situation without prejudice or emotion. Yet such effort must be made if we would understand the past and construct an ideal for the days to come. Straight thinking, not wishful thinking, is in demand today.

Perhaps you will grant me that the connection between society and science is one of symbiosis. Still you may feel that the relationship is one sided. You may argue that while pure science has affected industry to a great degree, the influence of society on science has been almost negligible. Let me give one example to combat this view — a view which has been widely circulated. Let me cite one way in which the development of science has been conditioned by advances in technology. Take the history of that awe-inspiring branch



of physics known as thermodynamics. It was just about a hundred years ago, namely, in the 1840's, that Joule performed his famous experiments on the mechanical equivalent of heat. He was not alone in these inquiries. Many others at the same time were concerned with similar problems. Joule's biographer has an explanation for this sudden interest in one branch of physics. "... To the locomotive," he writes, "must be attributed the birth of that philosophical interest respecting heat and work which immediately followed its general introduction. . . . The locomotive is obtrusive; it will be seen; and by 1842 locomotives had obtruded themselves well over Europe. . . . demanding the attention even of philosophers who had previously studied nothing lower than the planets." In this interpretation Joule's biographer illustrates a fundamental point. Here we see the development even of theoretical physics conditioned by current technological inventions. Here is one essential element in the interrelation of science and society.

So much for the interconnections through the path of industry. Now look for a moment, if you will, at another equally important aspect of this complex web of interrelationships. Consider the effect on science of the form of society in which the scientist lives. Consider the influence of the type of political and social organization of a nation in which science is developing. We scientists often fail to realize the debt that both science and industry owe to that movement which gave us our present degree of personal freedom. We fail to appreciate, perhaps, how much we owe to the release of human energies — a release made possible by the growth of free institutions in every Western nation. Do not let the momentary triumphs of the totalitarian states fool you. Do not let your eyes be diverted from the fact that three paths of development — political freedom, free enterprise, science — run parallel.

Science may temporarily appear to bloom under the dictatorship of a Hitler or a Stalin, but no one who has known the history of science can fail to prophesy the



Federal Works Agency—Section of Fine Arts

"A pioneering classless society is essential if we are to remain both efficiently industrialized and at the same time free."

A mural by Peter Hurd in the post office at Big Spring, Texas

ultimate withering of the scientific tradition in a totalitarian state. Progress in science has been made by the unusual person, the unorthodox individual. He cannot survive a regimented social order. If you value a continuation of scientific advance either in pure science or in technology, I do not see how you can fail to be concerned for the preservation of both free initiative and free democratic institutions. It seems to me illogical for a scientist to be even quietly resigned to the possibility of a highly organized paternalistic state.

Let me hasten to add, however, that I am not arguing for the *status quo*. Rather I am urging that our picture of the future of this country conform to an old American ideal — a unique form of society without a ruling class. Many fail to realize that the essential element in our past has been the relative classlessness of our social order. A rich continent, free lands, a rapidly expanding industrial civilization, immigration from Europe, the ideals of Jefferson and his followers, the democratic spirit of the frontier — these were the factors which made the history of man on this continent during the last 150 years without parallel in time or place.

But, you may ask, how about the landed aristocracy of the South in the days before the Civil War? Of course no realistic study of the American scene could fail to reveal that in some sections of the country, there have been for years classes based on inherited position. Not only in the South — ever since the heyday of the Federalist party a ruling class has been perpetuated with more or less success in some northern cities of the Atlantic seaboard. In some localities society has been stratified, to use a geologic metaphor. But these cases are not typical. Until the turn of this century, at least, anyone born in the lower levels of such a stratified society could move to another younger section of the country. There he could win a career for himself, irrespective of

his inherited position. Both the free lands of the West and the expanding industry of the East made society fluid. During the last half of the Nineteenth Century, the mobility of the social structure reached a maximum. Since 1900, however, social mobility has decreased. To me this is a disturbing fact. In pioneer communities, careers were freely open to the talented — the talented of all sorts. Who can claim that this condition is true today? More and more the structure of our social order has come to resemble that of a sedimentary mountain with many impenetrable and static layers.

Now, to carry on the American way of life, a high degree of social mobility is absolutely necessary. We must have sufficient flexibility in our social order so that individuals of each generation can seek and find their own levels. We must have the maximum of opportunity, the minimum of inherited privilege. A pioneering classless society is essential if we are to remain both efficiently industrialized and at the same time free.

To be sure, the socialists, as well as any who yearn for a totalitarian state, will reject my line of reasoning out of hand. So likewise will any who have come to believe that civilization depends on the upbuilding of a privileged class of wealth and culture. Both ideals, the socialistic and the patrician, appeal to many people — rarely, however, to the same individual. On paper the socialistic state appears attractive; in historical retrospect we find that a ruling wealthy class has, at times and places, enriched our civilization. I remain unconvinced, nevertheless, that the collectivistic trend in this day and age can lead to anything but tyranny. And, given the history of the last 150 years with the emphasis on democratic ideals and the growth of universal suffrage, I believe the perpetuation of a privileged class may well be the eventual cause of social chaos. From this chaos will come dictatorship, a totalitarian state, the end of freedom. Examine the history of Germany and of Italy, (Continued on page 392)

Technical Men in a Republic

Special Characteristics and Duties Are Required by Our Institutions from Those Scientifically Trained

BY HENNING W. PRENTIS, JR.

YOUNG men now about to make a frontal assault on the ramparts of the American system of free enterprise find the moats and outlying works of that citadel already swarming with a huge army of idle men and women — some of whom, sad to say, would destroy the entire structure if they cannot gain its heights. Under such circumstances it seemed to me peculiarly fitting to discuss the characteristics and duties of technically trained men in a republic. Certainly the M.I.T. has few, if any, peers in its particular field of education. So when I make bold to add several R's to the three old R's of primary-school days, none of you will conclude that I am underestimating the prestige of your great institution.

For things that I am anxious to remember, I have always found it helpful to install cranial hooks on which to hang them. Perhaps these baccalaureate R's of mine may serve in that capacity for those of you who may decide to provide temporary mental pigeonholes for my observations. All save the first R have suggested themselves as I have contemplated the stupendous contributions that the scientific mind has made to the comfort, pleasure, convenience, efficiency, and scope of modern life and thinking: marvels such as the iconoscope, our great reflecting telescopes, the photoelectric cell, the vacuum tube, the cyclotron, the gyroscopic steering devices on our ocean liners, together with those new-found theorems dealing with the behavior of electrons, neutrons, and the various other members of the rapidly growing "tron" family.

My subject itself includes the first R. Nowadays men speak constantly of our American democracy, although the word "democracy" does not appear anywhere in either the Declaration of Independence or in the Constitution of the United States. A "Battle Hymn of the Democracy" by Julia Ward Howe would certainly have mystified our Civil War grandfathers, for a democracy is a form of government in which all important public questions are determined by the direct will of the current majority. Such government has never proved successful, as our forefathers knew. They took great pains to set up a republic instead — in other words, a representative democracy, in which the expression of the popular will was everywhere cushioned by representative rather than direct action, and the inalienable rights of the minority were sedulously safeguarded by a written constitution. As James Madison wrote in *The Federalist*: "Democracies have ever been spectacles of turbulence and contention; have ever been found incompatible with personal security, or the rights of property; and have, in general, been as short in their lives, as they have been violent in their deaths."

I make this distinction not merely in the interest of clarity of definition. There is a vital point involved: In a democracy popular passion, aroused by the tongue of the demagogue, is substituted for the rule of representatives, selected by the people presumably for intellectual capacity and character. Hence if we can successfully perpetuate the basic principles of a republic in this country, the opportunity for technically trained men to make their leadership effective in the promotion of the commonweal will steadily increase as science progresses.

In recent years the very word "democracy" has acquired such a favorable connotation in the public mind that collectivists are using it cleverly in divers ways to cloak efforts intended to undermine the system of checks and balances and the distribution of powers among Federal, state, and local governments, so laboriously devised by the founding fathers of this republic. Not only radicals but far too many well-meaning persons of influence and power are today only too willing to take questionable short cuts to cherished social objectives, under guise of the so-called democratic process. Witness the unmitigated rule of the majority provided by the National Labor Relations Act, under the provisions of which the minority has no constitutional system of checks and balances to afford it protection. In addition the right of freedom of speech is denied employers. One can be a firm believer in collective bargaining, as I am, and yet be deeply concerned over the increasing tendency of government to trample on the rights of individuals and minorities in clear violation of the principles on which this Republic was founded and on which alone it can endure.

Every action that has been taken to change our Republic to a democracy has been justified, I believe, on the ground that humanitarian ends will allegedly be served thereby. Thus we are brought face to face with the situation described by Louis D. Brandeis in these words: "Experience should teach us to be more on our guard to protect our liberties when the government's purposes are beneficent. . . . The greatest dangers to liberty lurk in insidious encroachments by men of zeal, well-meaning but without understanding." Not merely as a patriotic duty but also as a matter of enlightened self-interest, technically trained men should be particularly alert to guard well the foundations of individual freedom and opportunity that the American Republic provides.

Any man who claims to be educated should have acquired a certain storehouse of facts and the ability to marshal those facts so as to think straight. But a technically trained man, it seems to me, should in

addition be able to maintain a peculiarly high degree of receptivity to new ideas and new impressions. Like V. K. Zworykin's iconoscope, his scientific education should have made his mind exceptionally alert to every new experience. Such a man will be the antithesis of that large group of human male animals who merely vegetate through life, who keep the same old plates in their mental cameras day after day until the images are so blurred and foggy that clear perception and stimulating thought become impossibilities. To the man who daily unrolls a new film behind the lens of his mental kodak, life never loses zest and intellectual stimulus. Out of his kaleidoscope of new impressions, there constantly form new patterns of thought, new concepts. The receptive mind, the iconoscopic mind, alone provides the basic raw material for that rarest yet most important of all faculties for the individual and the race — creative thinking. No government commission will ever write a great book, no committee of your Alumni Association will ever paint a great picture, no labor union will ever compose a symphony, no chamber of commerce will ever invent a radio, no college faculty will ever conceive a theory of relativity, no graduating class will ever compose a sermon that will move the minds and hearts of men. The individual, in the last analysis, accounts for all human progress.

Closely allied with receptivity is another R of higher education, reflectiveness. Just as the mirror of a huge telescope gathers and concentrates the rays of light from astral bodies millions of light-years distant and reflects them to the retina of the observer, so the trained mind receives countless impressions and then transmits them calmly to the eyepiece of reason for sorting, assembling, and co-ordinating, to the end that there may be order in thought and dynamic thinking directed to a productive purpose. Reflectiveness gives both breadth and depth to man's reasoning powers. In the words of that great engineer, John Hays Hammond: "The broader one lays the foundation, the higher one can raise the monument to achievement."

Resourcefulness is another outstanding characteristic of any man who is scientifically trained in the broad sense of that phrase. The mind of such a man is like a photoelectric cell — able to serve in diverse capacities, quick to adjust itself to the slightest external change, alert to the discovery and application of every possible approach to any given end. From a practical business point of view, I know of no factor more desirable or essential in a man than resourcefulness. A resourceful man is the joy of every executive — a never ceasing source of inspiration to the organization fortunate enough to count him in its midst. His vision makes supervision unnecessary. Like the vacuum tube, he can render useful service in countless ways. His is the type of mind that is not content to remain in the hollows of precedent but constantly seeks the high ground of new achievement.

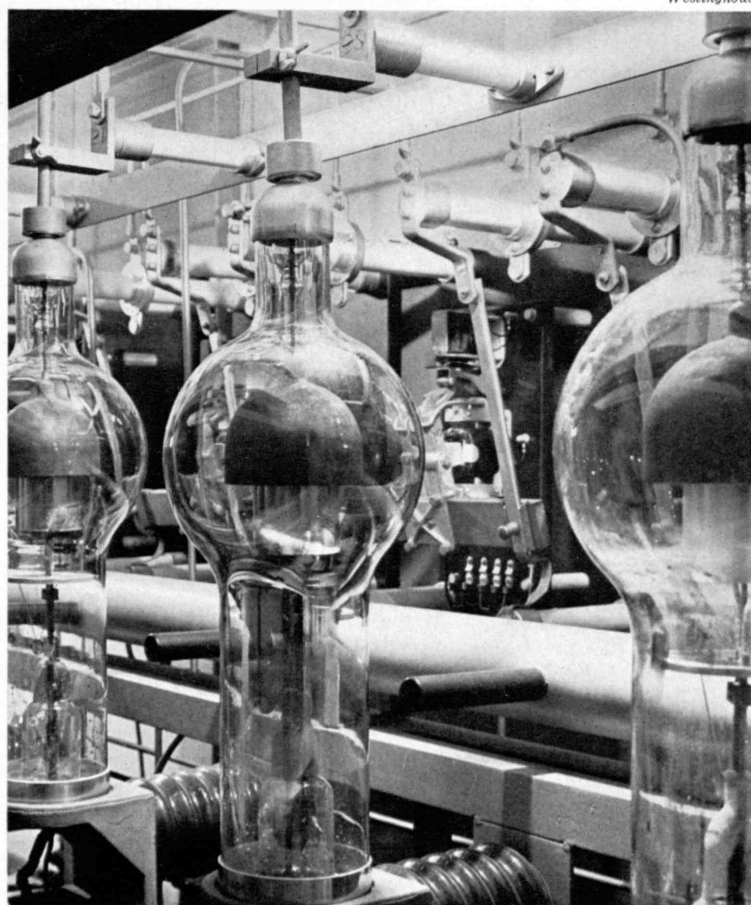
Resoluteness — the will to make oneself the master of one's vocation or profession — is obviously a vital part of the armor of every technically trained man in the battle of life. No man can hope to make a material and spiritual success unless he has the grim determination to drive ahead no matter what obstacles he may encounter.

This will to do may be likened to a mental cyclotron whose irresistible force, smashing the atom of indecision, liberates the electron of high purpose and thus releases the full dynamic energy of finely trained minds. The more one reads of the lives of men who have achieved distinction, the more one is impressed with the fact that without exception such men were endowed with an unusual degree of resoluteness. The career of Christopher Columbus is typical. In the museum in Seville, Spain, can be seen the old navigator's textbooks — the works of Herodotus and the *Travels of Marco Polo* — bearing annotations in his own hand on page after page. He schooled his mind with all of the technical resources at his command. On August 3, 1492, he set out in his three cockleshells from Palos and for seventy days sailed an uncharted sea with little but his own unconquerable spirit to support him. But his resoluteness never failed. Read those entries in his journal. In the face of a mutinous and superstitious crew, a failing supply of drinking water, and rancid food, day after day he recorded: "Monday we sailed due westward"; "Tuesday we sailed due westward"; until finally his resoluteness was rewarded when a flickering light on Watlings Island was discerned at two o'clock on the morning of October 12 and a new world was discovered. Constancy of purpose, resoluteness, willingness to work — these are the indispensable requisites of every technically trained man who seeks to leave his mark on his day and generation. Thomas Edison said: "I never did anything worth while by accident nor did any of my inventions come by accident. They came by plain work."

As an untutored layman so far as engineering is concerned, I have always marveled at the gyroscopic steering apparatus which I have seen functioning on our huge ocean liners. Once (*Continued on page 394*)

"... The ... tube ... render useful service in countless ways."

Westinghouse



News and the State

Swifter Communication of Constantly Increasing Amounts of Information Leads to Important Social Consequences

BY FRANK B. JEWETT

AN ALUMNI DAY CONFERENCE PAPER

WITH the physical elements on which electrical communication services and usages are based we all have some acquaintance. Likewise the general course and history of their development are reasonably familiar. As to both the elements themselves and our view of them, developments at the near end of the historical avenue, rather than at its origin, are of especial importance to us in this discussion. To tie matters together, however, and despite our general understanding, I should like hastily to sketch the factual sequences of physical development during the past century and a quarter — that is to say, from the period immediately following the Napoleonic wars to the present time. Following this I should like to point out one or two contrasts in the conduct of human affairs which appear to me of more than usual significance and which these new things have brought about. Understanding of the cause of these contrasts seems to me important if we are to understand and operate this modern world of ours — a world in which age-old passions have been implemented suddenly with hitherto unknown, and to a large extent untried, tools.

The first of the rapid means of communication which make possible the accomplishments we are discussing in this symposium was of course the electric telegraph. This was followed in fairly short order by the submarine telegraph cable across the Atlantic, and then by the telephone. When this third contribution of applied science to the art of communication was made in the latter half of the 1870's, the world had already gone quite a distance in linking itself together by electric telegraph lines and submarine telegraph cables. These had greatly facilitated its operations not only in the matter of transmitting news for general consumption but likewise in increasing the efficiency of all human operations dependent on the quick exchange of information. It is important to observe that the entry of the telephone into the world of its time meant the inauguration of a complete change in the *type* of communication available to man — a change of far-reaching future consequences. Through it, man was later to speak so that all could hear, and hear simultaneously.

Telegraph lines and submarine telegraph cables had provided what we may call the means for a quick record service — a service not dissimilar, except as to speed, to those services by which written or printed communications had always been transmitted from place to place and from person to person. In a word, telegraph service was and is analogous to postal service. It transmits information deciphered by the eye and is a service in which some element of delay is not only present

but tolerable. It does not in general involve the quick interplay of question and answer which is the basis of spoken intercourse.

The telephone, for the first time in man's history, gave opportunity not only for spoken communication at a distance but likewise for a service far swifter than any previously available. Even the earliest developers of telephony in the United States saw the possibility that through science the telephone could in time become essentially a no-delay service and thus make it possible for you and me, wherever we might be situated, to carry on conversation with some distant person on demand and without delay. Here in the United States we have already gone a long way toward reaching this ideal — a far greater distance here than anywhere else in the world. There is still a long way to go, however, but there are no evident insuperable obstacles in the path.

Dependence upon wires alone for the transmission of the electrical energy needed in telegraphy and telephony presented some hard hurdles — technical, economic, and political. For this reason the appearance of the next agency, radiotelegraphy — with its presage of radiotelephony — and the building up of radiotelegraph service across the water, between continents, to inaccessible places or places of little traffic, was a great event. Equally, if not more, important from a social point of view was the fact that radio for the first time provided the means of enabling people in mobile objects to be put in instant communication with people in other mobile objects or at distant points on land. Then came the radiotelephone and immediately thereafter followed the beginnings of the broadcasting art. More recently we have seen developed the instrumentalities for transmitting pictures from one point to another, either by wire or radio channels. More recently still we have seen the beginnings of the art of transmitting instantaneously pictures of moving events, that is, television.

At the same time that all these things have been going on, the art in each transmitting medium has been so improved that today, for both telephony and telegraphy in all their varied forms, the physical facilities which scientists and engineers have placed at the disposal of operating agencies can be connected together in any desired way; a usable channel of adequate communication from the point of origin to the point of destination may be, and frequently is, a conglomerate of wire and radio.

In a free and peaceful world the possibilities inherent in these great applications of science — these various modes of instantaneous transmission by wire and radio —

would normally have found their natural level. This level of proper usage would be one determined solely by questions of cost, convenience, and reliability. But we are not living in a free world, and hence many of the uses to which these instrumentalities are put are tortured things and not those which have developed as a result of the interplay solely of economic and physical laws.

One of the obvious early advantages of radiotelegraphy, for example, was the facility it appeared to afford of bridging the gap from point of origin to point of destination without the necessity of paying attention to the intervening countries over which it passed. To send a telegram from Boston to Bucharest wholly by wire methods, one had to employ a cable which landed in France or Italy. There the message was transmitted to a wire line which of necessity had to cross several countries, in each of which it was subject to the troubles and controls which those countries might see fit to impose. If, however, one could use a radio transmission capable of bridging the distance from Boston to Bucharest, what the intervening countries thought about the matter made no difference. Of course there are ways by which they might maliciously interfere with the passage of a radio message, but that is a game at which two can play and so, in ordinary times, is taboo by tacit consent.

On its face, radiotelegraphy seemed like a step forward to a more perfect world of free intercourse between free terminals. What we did not foresee was that free terminals might not always be free. We are today facing for a large part of Europe, and for the rest of the world for that matter, the same censorship and destruction of our direct means of communication by radio that we foresaw with regard to our wire transmission channels.

About two years ago, I was in Germany and was amazed by the freely expressed attitude of Germans toward the use of their mass communication facilities. As with everyone else, their principal means of reaching the mass of their population instantaneously was by radio broadcast. They could not, however, use this means of reaching their own people without simultaneously broadcasting to their neighbors, nor could they, even by the most severe penalties, prevent some of their population from listening to broadcasts from abroad. Most of those with whom I talked made no bones about the fact that no totalitarian state could tolerate the potential dangers to its existence inherent in such a situation. To overcome the obstacle, they had set themselves the task of supplying a wire-broadcast receiving set to everyone they thought it necessary to reach, so that in time all other receiving sets could be abolished by fiat and penalty. When this time arrived, the German population would be in position to receive only what they were designed to receive by way of information, and outside countries would receive nothing. Per contra, Germans would be prevented from receiving undesired information from outside the borders of the country.

To an American brought up in a philosophy of free speech and full information, this scheme was quite appalling.

So much for the physical things which enable us to transmit and disseminate quickly a vast amount of what we have come to call news or information, even though many may think that much of it belies these designations. How is this vast flood of informative material we are getting, almost coincident with the events it describes, likely to influence us in our actions and reactions? Are our actions and reactions to events transmitted to us in this fashion likely to be widely different, either individually or collectively, from the actions and reactions of our forebears in corresponding situations?

If we go back in time and contrast the situation which existed in the period of the Napoleonic wars with the situation we now have, it seems to me that we can hardly escape the conclusion that modern communication is more likely than not to produce a different individual and mass reaction to certain stimuli from that produced in our ancestors. Those of you who have read Caulaincourt's record of the ill-fated Russian campaign, and particularly that part of it which deals with the debacle of the retreat from Moscow, will remember the meagerness of Napoleon's information about affairs in Paris. More particularly, you will remember that those in Paris had little or no information about the campaign in Russia. Most striking of all is the account of Napoleon's return to Paris after he had decided to abandon his starving, freezing troops. As Caulaincourt reports in his daily diary of that trip, the thought which was uppermost in Napoleon's mind was that he must get back to Paris in advance of any news of the terrible disaster. He realized that only thus could he save his own situation.

To us today it seems almost incredible that no news whatever of one of the greatest military disasters in human history had reached any save possibly a few confidential officials in the capital of the country waging the war. The distance was only a thousand miles or so over land. Napoleon's faith in (*Continued on page 398*)

Impact of the news is intensified by the availability of the pictorial record. One type of wire-photo apparatus on exhibition at Technology's Alumni Day 1940.



World News Gathering

Transition from Phantasm of Today to Actuality of Tomorrow Is the International News Agency's Field

BY JAMES H. FURAY

AN ALUMNI DAY CONFERENCE PAPER

SO fast have world news events been moving that the actuality today, if mentioned two months ago, would have seemed like a phantasm. And yet the sudden transition from the phantasm of today to the actuality of tomorrow is precisely the field in which an international news agency must and does operate. Time was, not very many years ago, when a news agency was required infrequently to face what used to be called the "supreme test" of world news coverage and nerved itself for the shock. But nowadays so fast do world news events move and so rapidly may the whole face of the world be changed that the "supreme tests" of the efficiency and responsibility of an international news association have become frequent enough to be almost commonplace.

We who have been laboring in the field of international news coverage for a few years find in every such "crisis" a new and graphic illustration of the essential wisdom of the basic policy of the United Press and, indeed, of all the true international reporters — the reporting of the world's news as objectively as human frailty will permit. Real news reporting is the presentation for their own sake of the facts of what has occurred, without attempt to control the opinions which may arise as the result of those facts. Propaganda is the presentation for their own sake of opinions, in an effort to influence the thoughts of others. Fundamentally the difference between the two is this: News is fact, presented as fact; propaganda is opinion, frequently presented as fact.

Although the foregoing observations may seem trite and perfectly obvious to all newspapermen and probably to many newspaper readers, I am by no means sure that the average reader analyzes so closely the difference between fact and opinion. And therein lies the danger of propaganda. Muddled thinking and fuzzy differentiation between what is fact and what we may like to believe is fact sometimes cause a great many difficulties in keeping our heads cool and our thinking straight.

Perhaps it is unnecessary at this stage to explain that we in the United Press consider ourselves primarily reporters of fact. Our chief duty, as we conceive it, is to record the facts of the news as accurately and as objectively as possible, doing our best not to let whatever personal private opinions we, as human beings, may hold, influence or prejudice our statement of the facts as we find them. Of course perfect objectivity is impossible to achieve, and we do not claim any such super-human result. But we do assert that we strive at all times to maintain an objectivity as complete as human nature will permit us to achieve. This sounds very

simple. All the reporter has to do is get the truth in the news! But when the war correspondent is seeking the truth, particularly under conditions as they exist today, frequently he is seeking something so elusive that it can only be approached and not quite reached. Even when he gets the truth, he has surmounted only the first obstacle. Thereafter he must first state the fact accurately and objectively and then transmit it to the various centers of distribution which send it around the world.

Right here is where the reporter begins to encounter such collateral difficulties as censorship and propaganda. He is likely to encounter the propaganda during the effort to obtain the truth, and the censorship after he has obtained the fact and wishes to send it on its way to the newspaper readers of the world. Both propaganda and censorship present difficulties, but of the two I am inclined to believe that propaganda presents the greater. It appears always in plausible form and nearly always wears a smiling countenance. It is always put forth by masters in the art, and hence that it frequently deceives the unwary and the inexperienced should not be surprising. The reporter's best defense against propaganda is experience, based on actual service sufficiently long to enable him to have a clear idea of the location of the pitfalls. The task of spotting propaganda and evading it is not made any easier when we realize that most propagandists sincerely do not believe they are putting out propaganda at all. They are active partisans of the cause they serve and can hardly be said to view the facts objectively and impartially.

As for censorship, there is not much that a correspondent can do about it when he is accredited to a warring country which has imposed one. The newspaperman may not like censorships, but they are understandable in wartime even though the reporter may believe that they are pretty stupid and that in the end the truth will emerge anyway despite all the censors in the world. The censorship rules are there, however, for the correspondent either to obey or to violate. If he violates the censorship in a country at war, probably he must expect expulsion from the country if found out. He must therefore decide in his own mind whether the bit of news he wants to sneak through is sufficiently important to the newspapers of the world to be worth his own expulsion. It is not at all difficult to evade a censorship once or twice, but it is very hard to continue such evasion consistently.

Since the present war began in Europe, scarcely a day has passed that has not brought forth some difficulty resulting from censorship. At the outset, censors in Great Britain and France were much more severe and

inept and much less sympathetic toward the troubles faced by American correspondents than they have since become. Gradually conditions have improved. Nowadays most correspondents understand that they cannot send news of any movements of troops or naval vessels. Censors, too, have learned that it is wise to co-operate wherever possible with the newspapermen and to explain deletions as fast as they are made in dispatches on file. Some exceedingly ridiculous situations have resulted from the operation of the censorships. Not long ago we received a cable from our Paris office which, on receipt in New York, read textually as follows:

UNITED PRESS NEW YORK
END ITEM

That was all. The censor had deleted every word of the dispatch except the two which concluded whatever it was that the Unipresser in Paris wished to tell us. We were not deprived of a news item even then, however, because one of our ingenious young men promptly transmitted a humorous dispatch telling our client newspapers what the censor had done.

The newspaper correspondent of today, particularly the foreign correspondent, in courage, resource, stamina, intelligence, writing technique, and loyalty to the needs of the ultimate readers of newspapers need yield to none of his predecessors. In modern times there has not been a better or more consistent job of news coverage than that presented to American newspaper readers since the present war began. But the men and women assigned to posts in the foreign field have not achieved their successes by accident, nor was their presence at Warsaw or Helsingfors or Bucharest or Narvik or Amsterdam or Antwerp when tremendous news developments occurred merely fortuitous. They were where the news was breaking because of long and careful planning which began as early as the autumn of 1938.

These preparations were by no means confined to giving instructions to various bureaus regarding action to be taken if and when war began. The problem of city-editing the whole world does not consist merely of sitting and waiting for something to happen. The men who city-edit the world must act on the belief that almost anything can happen anywhere at any time and, as a matter of fact, usually does. Consequently they have to be ready for everything, or at least for as many things as they can think of. They face three primary needs: first, trained men and women for

correspondents; second, intelligent and adequate location and direction of the manpower — this is what is meant by city-editing; and, third, communications for transmitting dispatches. All of these are important, but the third, communications, is by no means the least important.

Leased wire networks, as we know them in this country, do not exist in Europe. Long before the present war began, it was necessary for our people to explore all the potentialities and the speed of various forms of transmission from every part of Europe both to key cities in European countries which would probably be neutral and also to North and South America and to Asia. Numerous devices designed to facilitate and accelerate transmission had to be investigated and then adopted or discarded. Among these were wax cylinders for dispatches dictated by telephone in strange tongues; wireless printer telegraph machines; radio recorders; and the like. Thorough experimentation and exploration of methods such as these, consumed the better part of a year before we could feel satisfied that we had adequate and foolproof equipment ready for the emergency. Simultaneously staff men in key bureaus were constantly at work for months in border towns over the entire Continent, making such arrangements as were possible so that subbureaus might be established overnight in more remote places, if necessary, for passing copy across international boundaries. All news sources had to be checked and rechecked in order to avoid erratic reporting and to maintain accuracy.

This spadework was done quietly and as completely as possible. Its wisdom was demonstrated the instant war broke out. For with its outbreak, complexities which scarcely could have been foreseen were upon us. Most of the normal routes of communi- (Continued on page 400)



News transfer epitomized in a part of the Alumni Day exhibit at Technology — the teletypesetter apparatus in operation for the ultimate consumer

Radio in World Affairs

Great Social Values and Great Social Problems Are Generated as a Result of the Spread of Broadcasting

BY ALFRED H. MORTON

AN ALUMNI DAY CONFERENCE PAPER

RADIO, the greatest scientific aid to the spread of intelligence among men, is a social product. Its descent is from the discovery of electricity centuries ago. More precisely, radio awaited Maxwell's mathematical demonstrations of the existence of electromagnetic waves and Hertz's experiments with the waves themselves. The list of contributors to the development of radio is a long one, which includes Thomas A. Edison, Guglielmo Marconi, Sir Oliver Lodge, Edouard Branly, Lee de Forest, and dozens of others. Marconi's spectacular demonstration, culminating in the transoceanic transmission from Poldhu, England, to St. John's, Newfoundland, in 1901, served notice that wireless telegraphy was a useful device, not merely a capricious toy.

It was the addition of speech to wireless and the subsequent distribution of millions of receivers among the peoples of the earth that made radiobroadcasting the greatest of mankind's ventures into mass communication, simultaneously raising perplexing social problems. For the first time it became possible for one person to speak not only to a single nation but to many nations. Practically all of us listened intently to King George VI as he announced quietly and gravely from London that for the second time in the lives of most of his subjects war had come to the British Empire. When the President delivered the first of his fireside chats, practically every activity ceased except that of listening. Who would venture to evaluate its psychological effect on a bewildered people, worn by years of deep economic depression?

We can only guess at the impact of an entire radio system devoted to consistent bombardment of a people with propaganda of the most intensely nationalistic character. With armies advancing and falling back in Europe, millions of Americans crowd about loud-speakers to hear the latest news bulletins or an official pronouncement by the spokesman for a foreign government. In other parts of the world, too, millions listen, but to different and frequently utterly biased versions of news from the front. Radio is clearly recognized as a supreme instrument for reaching great masses of the population. "Radio . . . has the advantage over all other means of forming public opinion through its ability directly to impress the whole of the people," says an apologist for a foreign system. He adds further that his government "made the radio the all-embracing instrument for proclaiming its theses which were to be binding for everybody," and that the party government "and broadcasting have become one insoluble unit." Another foreign official speaks of the medium's "close relation with the radio listener."

The social importance attaching to radiobroadcasting is clear. What gives us concern is the only too obvious fact that the instrument may be used for ill purpose as easily as for good. The untruth that poisons men's minds passes as freely from the microphone through the transmitter and out of the loud-speaker as the truth that shall make them free. Systematic dinning of false argument into the average listener's ear will eventually convince him of the argument's validity. The public attitude is one of general acceptance. The average listener is quite content to laugh at the quips of Charlie McCarthy or to be transported to another world by the mastery of Toscanini. He is also fair prey for men who possess vibrant voices, colorful phraseology, and a thorough understanding of mass psychology. Thoughtful persons have realized the immense power of radiobroadcasting to sway public opinion and to motivate mass action. Certainly not unaware of the problems raised by these powers is the broadcaster himself. All of us seek to determine the place of radio in a progressive democracy.

Let us pause here to examine some of the qualities that make radiobroadcasting a very special channel for the circulation of opinion and of news and other information. The powerful influence of radio is due largely to four characteristics: the vastness of its coverage, the intimacy of the message it carries, its appeal to the emotions as well as to the intellect, and, finally, its power to motivate action. There are in the United States, according to best estimates, nearly 40,000,000 radio receivers. In times of crisis, therefore, we may assume a potential audience of perhaps from 70 per cent to 80 per cent of the nation's 130,000,000 persons. A German estimate has claimed that more than 90 per cent of the population has gathered before loud-speakers to hear an address by Adolf Hitler. The intimacy of the message carried over radio has been experienced by everyone. The listener on the most remote homestead in Montana, more than 2,000 miles from the nation's capital, feels as close to the President of the United States, speaking from the White House, as if he were sitting directly opposite the President in the Oval Room. It follows, therefore, that he who has the ability to arouse the emotions of his audience has this power multiplied a millionfold by radio. His appeal is direct and is fraught with the full weight of personality so frequently lost in print. As for radio's power of motivating to action, we have only to recall incidents in certain parts of Europe.

Through a pattern dictated by these considerations, American broadcasters provide an impartial service in the supply of opinion and of news and other information,

as well as an amazing variety of entertainment and educational features. By comparison with the modern metropolitan daily or national press association, radio offers a small volume of news. In normal times — that is, in times of comparative peace — radio attempts to offer little more than summaries of the day's happenings. Frequently some of these are of a specialized nature, such as the summaries of market prices carried in programs directed at our agricultural population. For the content of these news digests radio depends mainly on the marvelously complete services of the nation's press associations. The National Broadcasting Company, for instance, has available the full services of the Associated Press, the United Press, and the International News Service.

Radio does offer special, and frequently elaborate, coverage of domestic and foreign news events, but it is highly selective. Our own staff men at Radio City and Washington and those of affiliated stations, men with a thorough understanding of the news needs and methods of broadcasting, are assigned to arrange and manage the pickups that provide listeners with such programs as the official utterances of the President, the Secretary of State, and other men in and out of official life; broadcasts of political conventions; and so on. Here radio offers the full texts of important addresses and rather elaborate descriptions of events of international significance.

Abroad, the National Broadcasting Company maintains offices at London, Paris, Basel, Rome, and Moscow to arrange for the transoceanic relay either of interesting entertainment or of important news. In all parts of the world, in addition, N.B.C. has what newspaper editors call "stringmen," that is, persons whose services can be commanded whenever some event of interest in the United States occurs in their vicinity.

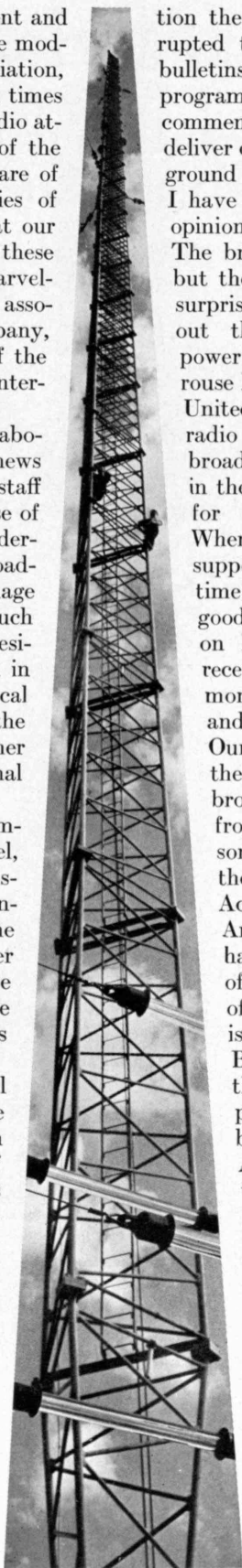
The war in Europe has changed the normal news service of radio to a very considerable extent. One of the results of the war has been the pronounced increase in the number of programs relayed from the belligerent capitals and the frequent extension of the broadcasting day. As the scene of war shifts about Europe, the representatives of N.B.C. move along with it. For weeks a staff correspondent broadcasted from Helsingfors during the Russo-Finnish hostilities. Later the same man interrupted a stay in Berlin to go to Norway to witness the invasion of that country, subsequently reporting from Stockholm. It is not uncommon these days for radio networks to remain open twenty-four hours a day. I note that the daily schedule now calls for eight or more programs from Europe. These include broadcasts by N.B.C. staff men in London, Paris, and Berlin, with the occasional substitution of Rome for one of the three cities named. In addition

the entertainment schedule is frequently interrupted to insert the broadcast of important news bulletins. Washington is a more frequent source of programs than usual, and our own foreign-news commentators are called upon several times daily to deliver digests of the news and to fit it into the background of facts that have gone before.

I have up to this point dealt with both news and opinion as broadcast over American radio networks. The broadcast of news raises no special problem, but the broadcast of opinion frequently poses some surprising and delicate situations. I have pointed out the peculiar characteristics of radio — its power to stir the emotions of the listener and often rouse him to action. Reaction to broadcasts in the United States is further intensified because of the radio industry's organization. American radio-broadcasting is privately owned. It is operated in the public interest. The systems of Europe are, for the most part, government monopolies. Whereas American broadcasters derive their support from the sale of a certain amount of time on the air to advertisers of commercial goods, European organizations usually depend on license fees levied on all owners of radio receivers. In most European countries radio is more or less strictly controlled by government and is utilized to spread the official philosophy. Our own government has been content to use the facilities freely placed at its disposal by broadcasters, but it has carefully refrained from attempts at control. Governmental censorship is, in fact, expressly forbidden under the terms of the Federal Communications Act of 1934.

American broadcasting network companies have no editorial policy. News and expressions of opinion are, therefore, essentially matters of program material, the stuff of which radio is built. Thus a speech by Adolf Hitler in Berlin and a message to the British people by their prime minister are equally desirable as program materials. The program is good or bad according to the interest it holds for American listeners. The National Broadcasting Company carries Mussolini's addresses, reports from Moscow on the proceedings of the Soviet governing body, and the speeches by the premier of the French Republic all without prejudice. At home the widest possible circulation is given to the messages of all major political parties. The pronouncements of governmental leaders are an absolute "must" for the program departments of American broadcasting systems. Income-producing commercial programs are often canceled to make space in the schedule for such addresses. We also give liberal periods on the air to members of the opposition to state their case.

Some curious results follow, bringing into sharp relief the essential difference between a free radio and a (Continued on page 403)



Tower of the new KDKA station at Pittsburgh

News by Electric Waves

A List of Titles Significant in Communications, Subject of the 1940 Alumni Day Conference

COMPILED BY RUTH MCG. LANE, VAIL LIBRARIAN

THE transmission of information by wire, cable, and radio is the accomplishment of that field of engineering commonly termed electrical communication engineering. Information is transmitted electrically in two ways: first, by means of guided waves over open wires and underground cables; second, by radio waves. Each method has its distinctive theory and structures, its special systems and applications. The literature of such a wide field is obviously almost limitless. This reading list attempts only to call attention to a few of the outstanding items published during a comparatively recent period. Because of the continuously rapid developments in electrical communication, much of the literature available is to be found only in current periodical articles.

I. ELECTRICAL COMMUNICATION — THE GENERAL SUBJECT

ALBERT, ARTHUR LEMUEL. *Electrical Communication* (2d ed.). New York: John Wiley & Sons, Inc., 1940. Pp. ix+534. \$5.00.

HARLOW, ALVIN F. *Old Wires and New Waves; the History of the Telegraph, Telephone, and Wireless*. New York: D. Appleton-Century Company, Inc., 1936. Pp. xii+504. \$5.00.

HERRING, JAMES M., and GERALD C. GROSS. *Telecommunications: Economics and Regulation*. New York: McGraw-Hill Book Company, Inc., 1936. Pp. x+544. \$5.00.

II. GUIDED-WAVE TRANSMISSION

TELEPHONY — THE GENERAL SUBJECT

"A Quarter Century of Transcontinental Telephone Service": 1. "The Line and the Laboratory," by JOHN MILLS, '09; 2. "The Circuits Go Up," by H. H. NANCE and R. M. ORAM; 3. "Transcontinental Panorama," by F. B. JEWETT, '03, *Bell Telephone Quarterly*, 19:3-58 (January, 1940).

DANIELIAN, N. R. *A. T. & T.: the Story of Industrial Conquest*. New York: Vanguard Press, Inc., 1939. Pp. 460. \$3.75.

GHERARDI, BANCROFT, and FRANK B. JEWETT, '03. "World-Wide Telephony — Its Problems and Future," *Bell System Technical Journal*, 11:485-519 (October, 1932).

———. "Telephone Communication System of the United States," *ibid.*, 9:1-100 (January, 1930).

"Technical Developments Underlying the Toll Services of the Bell System," *Bell System Technical Journal*, 15 (supplement to July, 1936).

CARRIER CURRENT — the medium which makes possible the simultaneous transmission of many conversations over the same wires or cables.

CLARK, A. B., and B. W. KENDALL, '06. "Communication by Carrier in Cable," *Electrical Engineering*, 52:477-481 (July, 1933). This article describes a trial installation and experimental work.

COLPITTS, EDWIN H. "Recent Trends in Toll Transmission in the United States," *Bell System Technical Journal*, 16:119-143 (April, 1937).

KENDALL, B. W., '06, and H. A. AFFEL, '14. "A Twelve-Channel Carrier Telephone System for Open-Wire Lines," *Bell System Technical Journal*, 18:119-142 (January, 1939).

ROSE, ARTHUR F. "Twenty Years of Carrier Telephony," *Bell Telephone Quarterly*, 17:245-263 (October, 1938).

COAXIAL CABLE — concentric conductors applied to the transmission of many types of communication services and to large groups of communication facilities.

ESPENSCHIED, L., and M. E. STRIEBY, '16. "Systems for Wide-Band Transmission over Coaxial Lines," *Bell System Technical Journal*, 13:654-679 (October, 1934).

[STRIEBY, M. E., '16.] "A Million-Cycle Telephone System," *Electrical Engineering*, 56:4-7 (January, 1937).

STRIEBY, M. E., '16. "Television Transmission by Coaxial Cable," *Electrical Engineering*, 57:249-256 (June, 1938).

WAVE GUIDE IN PIPES — transmission of signals inside of pipes, and directional radio by means of horn radiators.

BARROW, W. L., '29. "Transmission of Electromagnetic Waves in Hollow Tubes of Metal," *Proceedings of the Institute of Radio Engineers*, 24:1298-1328 (October, 1936).

BARROW, W. L., '29, and L. J. CHU, '35. "Theory of the Electromagnetic Horn," *Proceedings of the Institute of Radio Engineers*, 27:51-64 (January, 1939).

SOUTHWORTH, G. C. "Hyper-Frequency Wave Guides — General Considerations and Experimental Results," *Bell System Technical Journal*, 15:284-309 (April, 1936).

———. "Some Fundamental Experiments with Wave Guides," *Proceedings of the Institute of Radio Engineers*, 25:807-822 (July, 1937).

SOUTHWORTH, G. C., and A. P. KING. "Metal Horns as Directive Receivers of Ultra-Short Waves," *Proceedings of the Institute of Radio Engineers*, 27:95-102 (February, 1939).

TELEPHOTOGRAPHY, OR FACSIMILE TRANSMISSION — transmission of stationary images of any graphical material and the recording of such images, accomplished by either wire or radio circuits.

"Home Newspapers by Radio," *Scientific American*, 158:334-335 (June, 1938).

IVES, H. E., J. W. HORTON, and OTHERS. "The Transmission of Pictures Over Telephone Lines," *Bell System Technical Journal*, 4:187-214 (April, 1925).

"News Pictures by Wire," *Electronics*, 10:12 (November, 1937).

"Pictures by Wire," *Electronics*, 12:13 (September, 1939). Illustrated article descriptive of the various operating agencies.

Radio Facsimile: An Assemblage of Papers from Engineers of the RCA Laboratories Relating to the Radio Transmission and Recorded Reception of Permanent Images. Edited by ALFRED N. GOLDSMITH and OTHERS. New York: RCA Institutes Technical Press, 1938.

REYNOLDS, F. W. "A New Telephotograph System," *Electrical Engineering*, 55:996-1007 (September, 1936).

TELETYPEWRITER

HUNTER, HOWARD. "The Teletypewriter Helps the Police," *Bell Telephone Quarterly*, 18:161-180 (July, 1939).

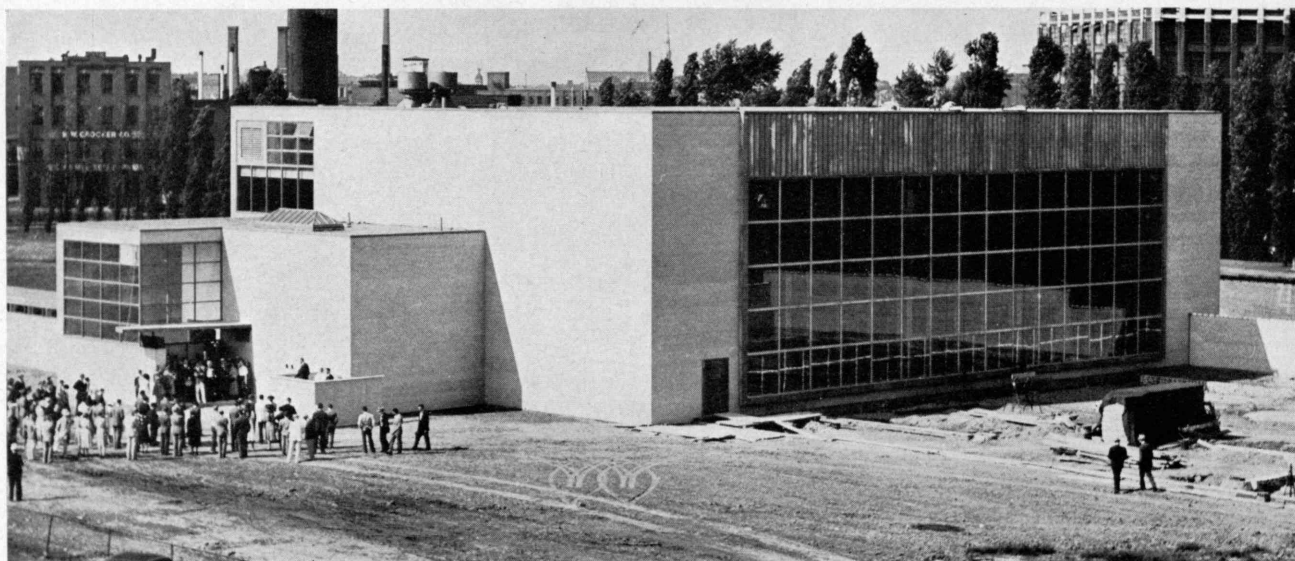
MARTIN, REX. "60-Megacycle Teletypewriter," *Electronics*, 10:10 (March, 1937). (Concluded on page 390)

Alumni Day 1940

A Camera Record



1. Pierre S. du Pont, 50-year class speaker, at the luncheon.
2. 1890 at table.
3. President Compton at the 50-year table.
4. Frank B. Jewett, '03, retiring President of the Alumni Association, does the honors as Carle R. Hayward, '04, heeds a request.
5. A cross section of 1935 discussing its first quinquennial reunion.
6. A cross section of 1917 engaged in general debate.
7. 1915, 25-year class, at the luncheon.
8. Henry P. Cogswell, '73, left, lunches with George M. Tompson, '73.
9. David A. Shepard, '26, newly returned from London.
10. Henry E. Worcester, '97, right, President of the Alumni Association, chats before luncheon.
11. Philip W. Moore, '01, about to settle down.
12. Dr. Compton and Mrs. Prosser at christening of the new Lawley 110's.
13. Confabulation.
14. Transportation under discussion: Dr. Compton with Charles E. Smith, '00, and Dean Lobdell, '17.
15. Commander J. C. Bertino, '23, left, up from Buenos Aires, sharing long-distance honors with Henry C. Rickard, '26, from Buenos Aires, and Franklin Osborn, 2d, '11, and Edward N. Roberts, '26, from Potrerillos, Chile. Beside Commander Bertino, Laurence C. Shaw, '09, with electrical engineers including Edward L. Bowles, '22, in the distance.
16. Horace Ford, Treasurer, with Page E. Golsan, '12, center, and Page Golsan, Jr., '34.
17. At Class Day, Technology types parade.



M. I. T. Photo

Second to None

Alumni Swimming Pool Is Dedicated, Expanding Facilities For Student Recreation at Technology

NOTABLY expanding the opportunities of Technology students for recreation and sport, the Alumni Swimming Pool was dedicated on Alumni Day. Second unit in the Institute's program for better facilities for building the man as well as the mind, the new structure is the first unit of the great recreational center planned for the future; in the judgment of competent critics, moreover, it is second to none in ability to serve the purpose for which it was designed.

The dedication ceremonies took place out of doors, at a corner of the new building, with the clean masses of the entrance wing as setting. Presenting the new structure to the Institute on behalf of the alumni body whose contributions, together with those of students and staff, made it possible, Henry E. Worcester, '97, new President of the Alumni Association and member of the Alumni Advisory Council on Athletics, spoke as follows: "On this 1940 Alumni Day, we are proud to dedicate Technology's swimming pool, the second unit in the Institute's building program to provide improved recreational facilities for Technology students.

"Last year on Alumni Day, the first unit — the field house and track on the land west of Massachusetts Avenue — was dedicated and named in honor of Frank Harrison Briggs, '81, a former chairman of the Advisory Council on Athletics. These units, known as Briggs Field House and Briggs Field, together with this swimming pool have been made possible largely by alumni generosity. They represent an in-

vestment of a half-million dollars. Nearly 80 per cent of the moneys used to build these units — the Briggs Field House, Briggs Field, and the swimming pool — were contributed by approximately 7,000 members of the undergraduate, staff, and alumni bodies. The remainder was appropriated from Institute funds.

"Technology's sports program, designed to benefit the average student by giving him healthful recreation through participation in sports, will be materially aided by these additions to the athletic plant. Through use of these units, Technology will be better qualified 'to build the man as well as the mind.' Thus we, as Alumni, have laid a firm foundation for future expansion of an athletic center which can better serve the recreational interests of all students.

"Preserved in this building is a stone from the steps of Old Rogers on Boylston Street, to perpetuate the rich traditions of the beginnings of Technology. The stone bears the following inscription: 'This stone from the steps of the first Rogers Building "The Tech on Boylston Street" 1864-1939.'

"Dr. Compton, it is my privilege as a representative of the alumni body to present to you this pool building, to be known as the Alumni Swimming Pool, which stands as a monument of alumni loyalty and interest in the welfare of M.I.T. and its future generations of students."

President Compton, in acceptance, stressed the vigor and ability of undergraduate operation of recreational activities at Technology, pointing out that undergraduate direction of

Above:
As dedication
ceremonies
opened on
Alumni Day.
The wall of
the Class of
1923 garden
begins at far
right; tempo-
rary corridor
to Barbours
Field House,
extreme left.

undergraduate affairs possesses much value as training in the acceptance and handling of responsibility, and that thus it complements helpfully the work done in professional courses of the curriculum. Receiving the key to the new building from Mr. Worcester, he passed it on to Joseph H. Myers, '41, of Evanston, Ill., President of the M.I.T. Athletic Association, who received it as symbolizing the association's responsibility for the use of the building by future generations of students. At Mr. Myers' invitation, many of those attending the exercises then inspected the building, where members



M. I. T. Photo
Looking from the top of spectators' seats toward the Gargantuan south window, with the main pool ready for tiling, the completed smaller pool beyond, offices and coaches' control room at the end

of the executive committee of the Athletic Association were on hand to act as guides and to answer the questions of the visitors.

The structure thus dedicated consists mainly of a room 125 feet long, which houses a standard intercollegiate six-lane swimming pool 42 by 75 feet, a shallow practice pool 20 by 40 feet, and seats for 340 spectators. The larger pool is 7 feet deep at one end and 13 at the other; the smaller pool goes from 3½ to 4½ feet in depth. Detachable cast aluminum starting blocks specially designed for both free-style and backstroke events are to be installed. The depth of the larger pool permits use of a three-meter as well as a one-meter diving board. Showers and locker rooms for students and offices for the coaching staff are included on the first floor, and the second contains a dressing room and showers for women. The room containing the pools is dominated by the Gargantuan southern window which gives on a walled garden and sunning area, \$10,000 for the completion of which have been donated by the Class of 1923. The window is so placed, and the building is so oriented, that during the middle of a winter day almost the entire water surface of the pool will be sunlit; in summer, however, the sunlight will strike only the deck on the south side of the pool.

The "firstness" of this building as nucleus of the great central structure ultimately to appear means that it has been so planned that subsequent units may readily be added to it as funds and needs appear. For the present, a temporary corridor connects it with the Barbour Field House near by. The architects, Lawrence

B. Anderson, '30, and Herbert L. Beckwith, '26, have reckoned with future needs in their design for the recreational center as a whole and in their construction of the present section. Like their Briggs Field House, dedicated last year, the swimming pool building is impressive in its functional simplicity as a unit, and in the employment of lasting warmth of color and material. From the engineering and scientific points of view, the building expresses the co-operation of many Institute experts. James Holt, '19, Associate Professor of Mechanical Engineering, was consultant on the design of heating equipment; Walter C. Voss, '32, Head of the newly formed Department of Building Engineering and Construction, on materials and practices; Donald W. Taylor, '34, Assistant Professor of Soil Mechanics, on soil conditions; Kenneth C. Reynolds, '25, Associate Professor of Hydraulics, on problems in hydraulics presented by the design of the pool; Thomas R. Camp, '25, Associate Professor of Sanitary Engineering, who prepared the design of the filtration system; and Parry Moon, '27, Associate Professor of Electrical Engineering, who assisted on questions of illumination.

Incandescent lights, uniformly spaced in recesses over the pool and seating areas, with louvered openings, are being used. A tempered glass window two feet in diameter permits underwater observation of swimmers in action. Noise reverberation will be cut by the use of acoustic material so that spoken instructions or announcements can be heard easily. The interior of the building is especially attractive through the use of face brick, yellow glazed brick, and plaster. In the pool room itself, tile of an eggplant shade blends pleasantly with the warm light gray of walls and ceiling. The tanks are of white tile. Light gray tile will cover the decks themselves, with a clear light yellow tile in copings and other accents. In the women students' quarters, a gray-green glazed brick has been used. Wherever necessary, tempered glass has been used in the glazing as a precaution against accidents. Throughout, materials have been selected with a view to economical maintenance as well as pleasant appearance. Of the \$428,000 which were pledged by Alumni during the campaign to provide these facilities, \$400,000 have already been received.

During construction: a treatment tank, part of the water system, arrives for installation.



W. F. H. Purcell, '38

A Day and a Decade

Alumni Day 1940 Celebrated as Marking Dr. Compton's Tenth Year; Pierre S. du Pont a Class Day Speaker; Festivities Enthusiastically Enjoyed

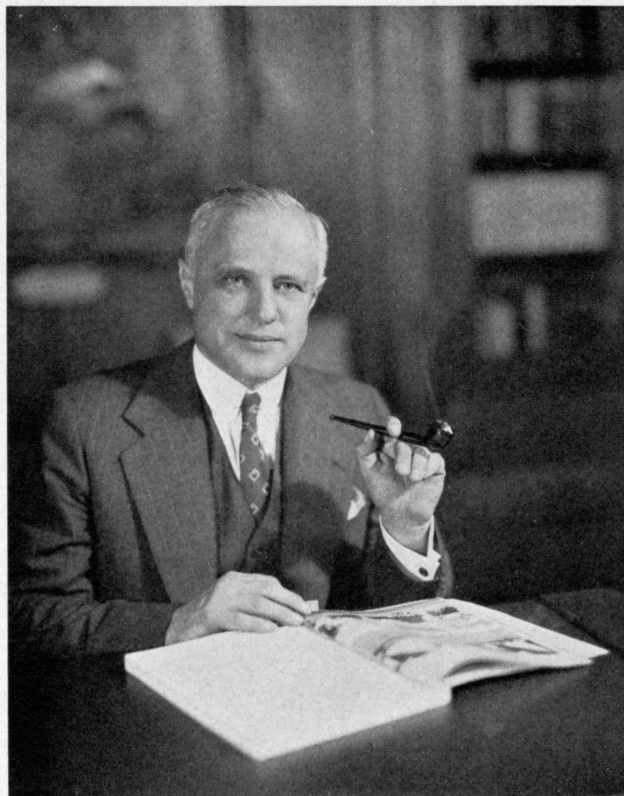
THE banquet which concluded Alumni Day 1940, attended by over a thousand — the largest banquet group on record — was not merely the close of a most successful and enthusiastically enjoyed festive day but celebration of the commencement of Karl T. Compton's second decade as president of the M.I.T. Alumni saluted the record and greeted the man with a demonstration of good-fellowship the extent and sincerity of which marked well the affection and loyalty with which Dr. Compton is regarded. A silver flagon presented on behalf of the Alumni Association was tangible representation of that feeling, as were roses for Mrs. Compton. A gift of \$100,000 from Alfred P. Sloan, Jr., '95, to expand the present Sloan Automotive Laboratory for better co-operation in national defense through aeronautical engine research, and a grant of \$200,000 from the Rockefeller Foundation to foster a program of education and research in biological engineering were announced by Dr. Compton in the course of his annual survey of Institute affairs. The cordiality of the evening found another opportunity for expression when Dr. Compton introduced Mrs. Ellen A. King, who for long years, as sustainer of the hungry in the Rogers lunchroom and then as supplier to the intellect in the Cilley Library in Walker Memorial, endeared herself to Technology men. She was roundly applauded.

The day which this banquet brought to an end was one of praise for the tireless committees and their able chief, Francis A. Barrett, '24, and of unqualified satisfaction to the hundreds of Alumni and their families and friends. The remarks of the conference speakers are substantially presented in this issue of *The Review*. Dedication of the Alumni Swimming Pool is also detailed elsewhere (page 380). This first portion of Technology's planned athletic center, made possible by alumni, student, and staff generosity, was open for inspection after the dedication ceremonies.

Class Day

Speakers at Class Day exercises included Pierre S. du Pont, representing the fifty-year class, and Louis H. Young, the twenty-five-year class. Frank B. Jewett, '03, as president of the Alumni Association, presented 1940 its class banner, with acceptance by David T. Morgenthau, Acting President of 1940.

In the course of his remarks, Mr. du Pont declared: "Today we stand on the threshold of events the outcome of which no man can foretell. Empires looked upon as everlasting as the seas and mountains, seem to be crumbling; lesser nations have already disappeared. We ourselves have changed suddenly from a people committed to isolation and peace regardless of trends in



Vantne

KARL TAYLOR COMPTON
President of the M.I.T.

foreign lands, and we are now embarking on a course of military, naval, and aerial defense the like of which has never before been known. Such reversed courses are by nature hysterical; they may become dangerously so without proper guidance.

"The choice of those who will guide us in the future should rest upon such as possess calm judgment for planning the course to be pursued. Ability to assemble facts, to weigh their importance, and to select for immediate attention the most necessary preparations should be possessed by the planners and exercised by them to the greatest degree. The planners' former record for correct analysis and action must be of the best. Mere spending of huge sums of money, and haphazard action without correlating the whole, end nowhere. In times of stress a good leader does not depend upon the result of experiments but uses first, and to the utmost, well-known and well-tried materials and methods. A foundation so laid may be supplemented, but supplemented only, by additions of an experimental nature. If conditions are critical, plans for economic and social reform should be laid aside temporarily, even to the point of a retrogression to old-fashioned but well-tried methods, instead of pursuit of those untried or not yet thoroughly proved successful.

"Wise leaders must have the will and desire to delegate work, must select with great care their immediate subordinates, delegate to them definitely the work to be

pursued, require full and frequent reporting, but only to such extent as is useful and necessary for measuring results and for future planning. Good delegates can be hampered, and at times their work destroyed, by too much unsought attention and direction from above.

"Single-minded judgment should be avoided. All men make mistakes; therefore, opinions of others should be sought constantly, but in the end the responsible head — be it a single individual or a group of men — must make decision clear cut, definite, and in accord with the best collective judgment.

"Organization for defense preparedness is more nearly akin to modern industrial organization than it is either to political organization or to such organization as is needed for army, navy, or air force maneuvers. The development of different industrial enterprises has brought forward a number of groups and individuals best qualified in their own lines but all possessed of a common aptitude that brings about co-operation and co-ordination in collective enterprise. . . .

"Ability to organize large operations of different kinds into a co-ordinated whole seems to be born in men and not likely to be acquired by those who have failed to show themselves possessed of it in lesser operations. Therefore, in selecting a leader to bring about rapid and orderly development of a preparedness campaign, it is of prime importance to place the responsibility upon one or more men who have already shown themselves capable of carrying the burden. Such men are to be found among the industrial or financial groups; it would be surprising to find them in the political group."

Christening of Boats

Christening of two Lawley 110 class boats afforded Alumni a close-up of another aspect of the Institute's general athletic and recreational program. The new craft, 24 feet in length, 4 feet 2 inches in beam, carrying 118 square feet of sail, and with 300-pound keels, were purchased from the Henry Adams Morss Memorial Fund, established by the family of Mr. Morss, '93, who served the Institute long and ably as a member of the Corporation and whose interest in the sailing project was unstinting. Miss Eleanor Morss, his daughter, christened one of the new boats the *Morss*, and Mrs. William H. Prosser, daughter of Professor Erwin H. Schell, '12, active supporter of sailing at the Institute, christened the second the *Schell*. Exceptionally fast, the Lawley 110's sport genoa jibs and parachute spinnakers. The boats are painted in complementary fashion, employing the Institute colors.

President Compton's Address

Always a highlight of the Alumni Day banquet is President Compton's annual family survey of how things have been going at the Institute. It was of added interest this year since it reviewed a decade. Salient portions follow: "Just as a census is taken every ten years, so it is useful in our institutional affairs to take stock from time to time. You have honored me by making this dinner in the nature of a celebration of my

ten years of service to your institution. It seems fitting, therefore, that I should respond by making a report of stewardship over this period. I do so with some pride in our progress and accomplishments and much humility in the realization of failure to accomplish more, considering the wonderful possibilities which we have had before us, many of which we have not succeeded in converting into realities. But most of all I would pay tribute to the devotion, co-operation, and ability of my colleagues, without which nothing could have been accomplished and whose teamwork is the finest quality of our institution.

"During the past ten years gifts have totaled \$16,273,000, which included \$5,000,000 from the balance of the George Eastman contract. This sum compares with \$13,237,000 in the decade 1920 to 1930, of which \$4,500,000 were from the Eastman contract. Of the funds donated in the past decade, \$14,500,000 have gone into endowment and buildings, and the balance of \$1,773,000 has been expended to finance current projects. The net amount of invested funds has increased from a book value of \$30,000,000 in 1929 to one of \$37,000,000 in 1939. Value of plant has gone from \$13,883,000 to \$16,000,000. About \$3,225,000 have been added to permanent scholarship and relief funds.

"Notable additions to our physical plant are the George Eastman Research Laboratories for physics and chemistry, the William Barton Rogers Building for architecture and other purposes, the Wright Brothers Memorial Wind Tunnel, the Graduate House, Bexley Hall for residence of married graduate students, the Cyclotron Laboratory, the High-Voltage Laboratory, the Barbour Field House, the Briggs Field House and adjoining track and athletic field, the fine new Alumni Swimming Pool, the Solar-Radiation Laboratory, and several minor buildings. At the same time there has been notable progress in the beautification of the grounds.

"These new facilities, and attendant factors, have had a profound influence on the Institute's prestige and accomplishment. Look, (*Continued on page 386*)



Technology's fleet expands — one of the new Lawley 110's on her first voyage after the christening at which Dr. Compton presided on Alumni Day.

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

A Message to 1940

IN his *bon voyage* message to the 691 graduates awarded degrees at the Institute's seventy-third commencement exercises on June 4, President Compton emphasized the importance of a technical education as a preparation for meeting the vexing human problems that confront this bewildered and uneasy world. He stressed his conviction that the basic objective of Technology's contribution to education is the improvement of the lot of mankind and urged the co-ordination of individual skills in co-operative efforts.

Turning to international relations, Dr. Compton spoke, as often before, of his firm faith in the idealism of the youth of America: "This is a world governed by the scientific laws which you have studied; its material resources are available for use or abuse by mankind. It is a world of people, fundamentally people like you and me, divided into groups having differing and sometimes clashing ideologies and easily swayed by emotions. One national group feels bitterness and desires revenge for previous humiliation and, in its opinion, for injustice. Another group is swayed by ambition. Another group, including most of us, wants to be left alone to work out its own salvation without interference with, or from, the outside. One side believes in the rights of minorities and in self-determination, while another side believes in merging weaker groups into a unit dominated by the strongest member.

"Our nation went to war in 1917 for a great ideal. The charge that we went for sordid motives or were led into it by financially or politically interested groups is

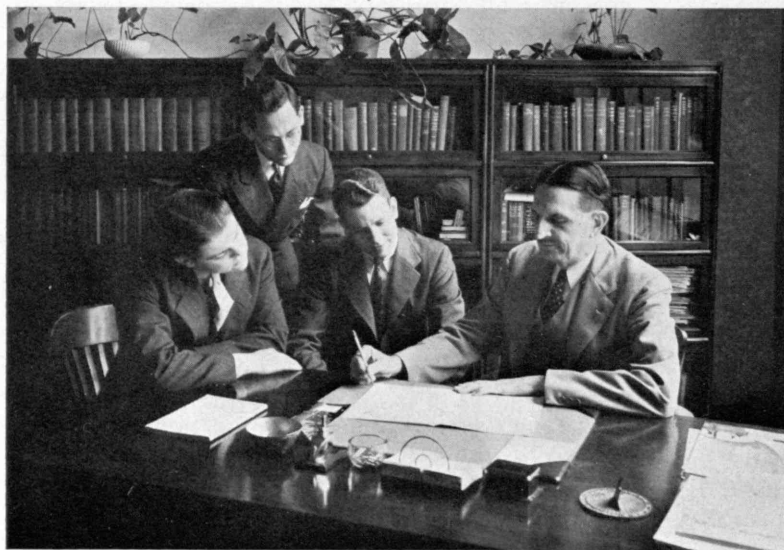
false and absurd. The fact is that the nation was swept by a wave of idealism and self-sacrifice. We went to aid countries whose self-determination had been transgressed; we went to make the world safe for democracy; we sacrificed and fought to end war for all time. In the disillusionment of failure to accomplish these objectives, some have become cynical and have charged self-interest, propaganda, greed, and the like to the generation of 1917. This tendency is peculiarly strong among the youth of today, who, like their elders, recognize the failure but who do not understand what happened. Make no mistake about it, our people overwhelmingly went into that war in 1917 with high and worthy ideals, and it was not then or in 1918 that we failed.

"Those ideals are just as true today as they were then. They just as much deserve protection. Our great job today is not to lose faith in the ideals but to try to avoid the mistakes made subsequent to 1917 — mistakes which lost us the opportunity that was in our grasp to secure democracy and peace.

"It seems clear to me that these mistakes were principally three: First, though we and our allies made great sacrifices to win the war, we were too selfish to make sacrifices to reduce bases for future wars. Second (and here we in America are especially at fault), having co-operated to secure victory, we were unwilling to shoulder the responsibility of sharing the administration of peace. Third, having gone through the shock of the last war and having had our hopes of universal peace raised, we refused to heed the clear danger signals of oncoming catastrophe and to take vigorous steps to prevent it. I think there is no doubt that it could have

been prevented had the nonaggressor nations, including ourselves, had the wisdom, courage, and social responsibility to say to an aggressor quickly, in no uncertain terms, backing their threat with adequate force: 'You shall not invade another's territory, else the economic and military forces of the peace-loving world are put in action against you.'

"I believe that the policies of pacifism and isolationism, whether caused by idealism or by selfishness, are in no small degree responsible for today's tragic ruin of the hopes of twenty years ago. I feel sure that many sincere people do not agree with this diagnosis. An essential part of our democratic heritage is that we can disagree and debate. After thorough discussion the preponderant judgment of the mass of intelligent people is more likely to be wise in the long run than is the judgment of any individual or small group. When this mass judgment is pronounced, it is part of the democratic process to co-operate in the



Professor Ralph G. Hudson, '07, with (left to right) Marshall P. Bearce, Henry Rapoport, and Thomas F. Creamer, marshals of the Class of 1940, checking plans for Commencement Day

fulfillment of this judgment. But the question of whether you agree with me or not is perhaps not so significant. What is significant is that you are entering a world in which tremendous problems must be met and solved. You should have in you the realism of the engineer and the logic of the scientist. These are valuable qualities with which to face such problems. Add to these the idealism of American youth at its best, and I have faith in the results."

To the Corporation

JAMES M. BARKER, '07, a member of the board of directors of Sears, Roebuck and Company and former Vice-President and Treasurer of that company, was elected a life member of the Institute's governing body at its meeting on June 4. He served as an alumni term member of the Corporation from 1934 to 1939.

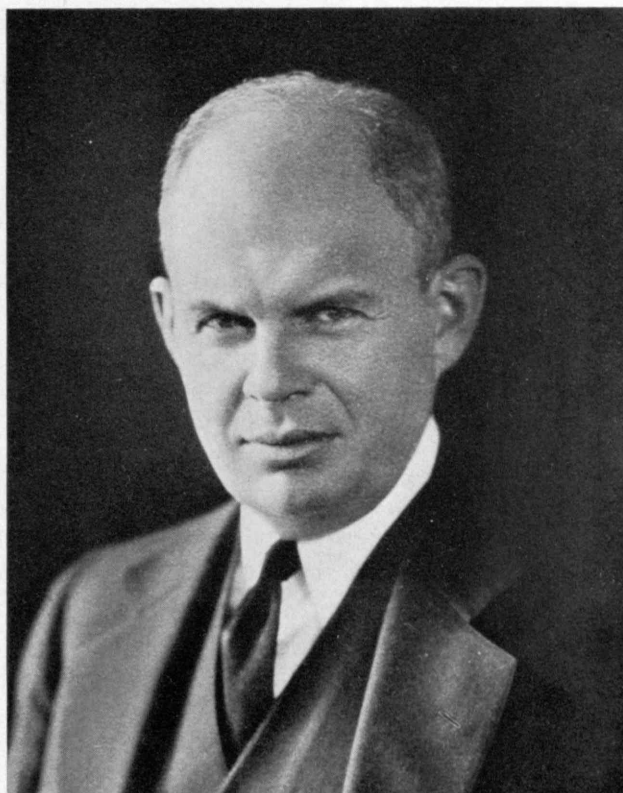
Following his graduation, Dr. Barker was an assistant in Civil Engineering for two years, after which he joined the American Bridge Company as a draftsman. Later he carried on special engineering work for Professor George F. Swain, '77. Returning to the Institute in 1914, he was a member of the teaching staff of the Department of Civil Engineering until 1919. During this period he was also an instructor in civil engineering in the Graduate School of Applied Science at Harvard University from 1914 to 1915. Dr. Barker joined the First National Bank of Boston in 1919, and from 1920 to 1928 he was manager of its branch in Buenos Aires.

His association with Sears, Roebuck began in 1928 in Philadelphia, whence he moved to the company's headquarters in Chicago. His election as vice-president came in 1930. Dr. Barker is a director of the Harris Trust and Savings Bank of Chicago and a member of the American Society of Civil Engineers, the University clubs of Chicago and New York, the Algonquin Club of Boston, and the Jockey Club of Buenos Aires.

New Department

AS part of its broadening attack on problems of the building industry, the Institute has established a Department of Building Engineering and Construction. The program of the new Department will be based on the work of the Institute's long-established Course in Building Engineering and Construction, which has been part of the Department of Civil and Sanitary Engineering. Professor Walter C. Voss, '32, who has been in charge of the Course, has been appointed head of the new Department. Associated with him on the staff will be Dean Peabody, Jr., '10, Associate Professor of Structural Design; Howard R. Staley, '35, Assistant Professor of Building Construction; and Albert G. Dietz, '32, instructor in Building Engineering and Construction.

The program of the new Department, as explained by Professor Voss, is designed to meet the requirements of the building industry, which is acutely in need of technically trained leaders who will apply themselves to the solution of problems created by outworn traditions, inefficient methods, and lack of vision. Professional training for building engineering requires not only technical



To the Corporation: James M. Barker, '07

knowledge but an intelligent understanding of the pattern of national life and the far-reaching social implications of housing.

"To meet the challenge which the integration of this vast industry presents," Professor Voss said, "the Institute's new Department has as its objective the training of men in subjects basic to the engineering design and construction of buildings. These include the more economical and intelligent use of existing materials; studies of matters fundamental to the development of new materials and methods; and the economic factors which control the industry's operations. The Department will strive to develop in the student an appreciation of the related problems of the architect, engineer, builder, and manufacturer."

Visiting Committee Report

DEPARTMENT OF MODERN LANGUAGES *

THE Committee discussed at length the position that modern languages are intended to occupy in the curricula of the Institute and unanimously expressed their opinion of the desirability of having an applicant for admission to the Institute trained in the study of at least one foreign language. The Committee believe that this is one of the most effective ways of carrying out the spirit of the following statement in the Institute catalogue pertaining to a candidate for admission:

* Members of this Committee for 1939-1940 are H. B. Richmond, '14, Chairman, Arthur T. Hopkins, '97, Donald G. Robbins, '07, William H. Coburn, '11, John E. Aldred, Albert L. Guérard, and Taylor Starck.

"The candidate should bear in mind that the broader his intellectual training and the more extensive his general attainments, the greater will be the advantages he may expect to gain."

Dean Caldwell expressed to the Committee his complete sympathy with this desire on the part of the Committee but explained the difficulty of its accomplishment at the present time when, particularly in some of the midwestern sections of the country, no language preparation has been given to otherwise excellent applicants. The Committee accordingly felt that it would be unwise at this time to change the entrance requirements in regard to modern languages. They felt, however, that emphasis should be placed on the desirability of special preparation and that although actual instruction in a modern language is desirable before entrance to the Institute, the policy of several of the Departments — for example, that of Mechanical Engineering — should at least be extended as a minimum requirement in all Courses. This requirement is that for admission to work in the senior year or recommendation for a degree, the student must have a reading knowledge of French or German. The Committee would widen the choice of languages, however, so as to include a reading knowledge of any modern language in addition to English, but with the hope that the list should ultimately coincide with those languages in which entrance credits are allowed, namely, French, German, Spanish, and Italian.

Library Expansion

THE Cilley Library in Walker Memorial, much used by students and staff for relaxation, is to be enlarged this summer. The library has been located in a room in the southeast corner of the second floor of Walker Memorial and has gradually spread to an adjoining gallery. With the purchase of new books, shelf space in the present quarters has been exhausted. Acting on the recommendation of the Faculty Committee on the Library, the Executive Committee of the Corporation has made an appropriation to transfer the library to the opposite side of the building and to increase the amount of space devoted to books. By the addition of the present faculty dining room, the need for which has been relieved by the restaurant facilities in the new Graduate House, the Cilley Library will have room for nearly double its present 12,000 volumes, and its growth for the next few years will be anticipated. Its new facilities, which will include a satisfactory reading space, are expected to be of special assistance to students pursuing courses in the humanities under the Department of English and History. Half the present faculty dining room will be devoted to books and the remainder to a comfortable reading room, somewhat more secluded and convenient than any other space now available in the building. Not only will the present usefulness of the library be continued but, it is hoped, additional purchases of books for more serious reading may be made under the Frank H. Cilley Fund. The present faculty lounge, which is used chiefly for a music room for students, will be transferred to the old library quarters.

Annual Meeting

PRESENTATION of new officers of the Alumni Association and of regular annual reports engaged the Alumni Council at its 214th meeting on the last Monday in May, which concluded the year's work. Raymond Stevens, '17, retiring Vice-President, was chairman in the absence of Frank B. Jewett, '03. Technology's share in present programs for national defense was described by President Compton.

Tenney L. Davis, '13, Professor of Organic Chemistry, gave a brief talk on modern explosives, illustrated by demonstration experiments; and Stephen G. Simpson, '16, Assistant Professor of Chemistry, noted for his practice of prestidigitation, presented a series of tricks of magic which were regarded as a fitting conclusion to the year's activities.

A DAY AND A DECADE

(Continued from page 383)

for just one example, at the annual reports of research accomplishment as given in papers read at meetings of the American Physical Society. In the year 1929-1930 two such papers came from M.I.T.; from February, 1939, through April, 1940, there were sixty-three — between two and three times as many as came from any other educational institution or industrial or governmental organization. Four hundred and twenty-five books, papers, and other publications issued from the staff in 1939 as compared with 259 in 1930. At the last three general meetings of the American Chemical Society, more papers were presented from M.I.T. than from any other educational institution. . . .

"Probably the most important development of policy has been one which has, so faculty and employment officers testify, notably improved the quality of our students through wider choice and more careful selection of applicants for admission. Incidentally it has changed the distribution of our student body from 65 per cent from Massachusetts ten years ago to 65 per cent from outside Massachusetts this year. This change has been accomplished by a combination of factors: greater flexibility without lowering standards of entrance requirements, stabilization of enrollment at a predetermined figure, establishment of regional and freshman competitive scholarships, and especially the able and devoted help of about 200 Honorary Secretaries, located in every important population center, who interview and report on each candidate for admission. Recently we have been admitting about one out of three applicants; eight to ten years ago, before the stabilization plan was adopted, we were worried over falling enrollment!

"Of greater ultimate significance than any of our new developments may be the recently established M.I.T. Alumni Fund, which broadens the base of support of the Institute through annual contributions by Alumni. Instead of a high-pressure campaign for funds every twenty years or so, this plan will operate on a calm and friendly basis, permitting every Alumnus to include the Institute, as generously as he may wish, among his annual charities. . . . *(Concluded on page 388)*

"We'll have to shut down
... but our income will
GO RIGHT ON!



... because we bought insurance the NEW way"

"Of course we always have carried plenty of insurance on our buildings and contents, but it took a smart insurance man to show me that I could lose more as a result of a shut-down than the plant itself was worth.

"He pointed out that I also needed insurance to cover fixed charges, wages and salaries of key men, advertising and other expenses that would continue during the shut-down from fire, wind-storm, explosion, riot, aircraft and several other kinds of destruction.

"Then he told me about Business Interruption Insurance, putting clear-cut

information of the NEW way to buy insurance into a complete survey that he made especially for us. We bought the protection and now, after the fire, our usual dividends can be paid, our organization held together, ready when we reopen. We are sitting pretty."

***It will pay you to buy Insurance
the NEW way***

The NEW way of buying insurance is based on the idea that it hurts just as much to lose a dollar one way as another and that *what hurts most are the*

big losses. Hartford agents sell insurance, not just policies. They know how to fit insurance to your particular requirements—whatever they may be.

Just call Western Union

—in Canada, call Canadian National Telegraphs—and ask for the name of the nearest Hartford representative. Or call your own insurance broker for full details on Business Interruption Insurance and the NEW way of buying insurance protection for yourself.



Hartford Fire Insurance Company

and the HARTFORD ACCIDENT AND INDEMNITY COMPANY write practically every form of insurance except life

HARTFORD, CONNECTICUT

A DAY AND A DECADE

(Concluded from page 386)

"The Institute again closes its year's operations, and its all-time record of operations, without a deficit. Our budgetary control has been very close and our Finance Committee's handling of investments very successful, considering the times. During the year \$670,600 have been received in gifts and bequests. While this amount is substantially less than that of the two preceding years, it is nevertheless significant. Notable in this year's list are \$50,000 from the Charles Hayden Foundation for scholarships, \$98,261 additional to the Thomas Upham Fund for student aid, \$34,750 from the Alfred P. Sloan Foundation for postgraduate fellowships in Business Administration, \$35,550 contributed from many industrial companies toward support of our Industrial Relations Section, \$30,000 anonymously donated for research in cosmic-terrestrial relations, \$10,000 from Bartlett Arkell in support of our food technology program, \$27,210 in final payments of pledges in the recent Gymnasium Fund campaign, and numerous other items. The Class of 1923 has very generously and in timely fashion voted a special gift of \$10,000 to provide the garden and the wall in front of the Alumni Swimming Pool, thus adding a very attractive and useful feature which otherwise would have had to be omitted because of lack of funds.

"I am particularly glad to announce that the Rockefeller Foundation, after careful consideration, has come to our assistance in the biological engineering program with a grant of \$200,000 to be used, over a period of not less than five nor more than seven years, to help us get this program started and given a period of trial development. In this connection I can also announce the following additions to the staff of biological engineering, which is a division of our Department of Biology and Public Health: Professor E. Newton Harvey, physiologist, biochemist, and biophysicist of Princeton University, will spend a part of his time at M.I.T. next year as a lecturer and consultant and will direct one or two research projects. John R. Loofbourow, formerly of the staff of the basic science research laboratory of the University of Cincinnati and now research professor at the Institutum Divi Thomae, will join our staff next fall as associate professor of biophysics. He has a distinguished record as teacher, administrator, and investigator. Another new and interesting appointment is that of Ernest E. Lockhart, '34, now physiologist and biochemist at West Base, Antarctica, who rejoins the Department as research associate. Taking part in the teaching of advanced subjects, these new men will supplement the present excellent staff in biology and public health. . . .

"You must naturally wonder what the Institute is doing about national defense. Briefly stated, we are helping where we can and are making efforts to put ourselves in condition to be useful along certain lines to which our facilities of equipment and staff are peculiarly adapted. With war become so highly technical and mechanized, our contribution can be more significant than ever before — in the training of technicians, in the selection of men for important technical or administra-

tive posts, and in the conduct of research and development projects. I cannot properly give details, but I can say that several of our staff have been loaned temporarily to the government, that various ones of us are in consultation every day on the preparedness program, and that provision has been made to prosecute several research-development projects of importance.

"One thing I can announce, however, and I do so with the greatest satisfaction. You all know that M.I.T. established the first courses in, and the first department of, aeronautical engineering in America and that the record of our research and the performance of our graduates in this field have been very significant. . . . This aeronautical engineering work has two main aspects: the design of planes and the design of aircraft engines. In the fall of 1938 we dedicated the Wright Brothers Memorial Wind Tunnel, the gift of men interested in the progress of aviation. Subsequent use has demonstrated that this wind tunnel is equal to the best in the world in its accuracy and usefulness for developing the aerodynamical features of airplanes. It is now in constant use by day and in frequent use by night. On the power-plant side we have had the Sloan Automotive Laboratory, given us by Alfred P. Sloan, Jr., in 1929, and largely equipped through the generosity of Henry M. Crane, '95. It is excellently adapted to engine testing and research and serves the needs both of ordinary automotive engineering and of aviation power-plant engineering, though the principal emphasis has been on the latter.

"For several years past it has become increasingly evident that the growing aviation industry calls for more students trained in this field. The present great program of national preparedness further emphasizes this want. Although we realized this need and opportunity, we could not meet them because our facilities and space were already being used to capacity. The particular bottleneck for us was the overcrowding of the automotive engine laboratory. A few days ago, I was called by long-distance telephone by a gentleman who had learned of this situation. He wanted to help us to increase the effectiveness of our contribution to the nation's program of aircraft design and production. He asked some very pertinent questions, including: 'How much will you need to expand the automotive laboratory so as to take care of the airplane engine work satisfactorily?' I told him that we would need \$100,000, and that this sum would be used to erect a two-story addition to the present engine laboratory. He then said: 'You can count on me for that; go ahead with it.'

"This friend who so opportunely stepped in to enable us to expand our program in aeronautical engineering at a time when the need is so urgent is the same benefactor who, eleven years ago, gave us our present automotive laboratory — Alfred P. Sloan, Jr., of the Class of 1895.

" . . . The past ten years have been the most interesting and satisfying years of my life. I owe an enormous debt of gratitude for the privilege of serving this great institution and for your unfailing friendship and co-operation. I wish I could have accomplished more, and I pledge you my best efforts in the years that are ahead."



This Man Created *MARKETS*

WOULD the electrician have his job? Would you and I have electricity as a utility? Would we have radios or motion pictures? Or could we enjoy life as we do had not Edison labored as he did? Tirelessly, he sought answers to riddles. With the answers known to him, he applied what he had learned to indefatigable research so that we might enjoy the safety and the comfort of the many utilities made possible by the harnessing of that great force of Nature, Electricity.

Yes, the electrician might have his job today because some other man or some other men might have done just what Edison did—but the point remains that Edison did these things when he did them and made them practical and available within a few short years after he had uncovered the secrets.

Sixty years ago, his phonograph made possible the recording and the reproduction of the sound of the human voice. A decade afterward, because Edison wanted to give action in pictures to the sounds he could record and reproduce with his phonograph, he made his motion picture camera and projector and subsequently invented the talking motion picture.

Yes, the motion picture industry might exist had not Edison done these things, but his contribution

to this art is recognized and honored by that great industry itself.

Other men might have done what Edison did, but the point remains that Edison did these things when he did them and he made them available for mankind to enjoy.

Waxed paper and gummed paper tape—perhaps you do not know that Thomas A. Edison was the first to make these. Humble utilities they may be, but nevertheless they play an important part in our every day life and it was Edison who brought them into use for our benefit. Over 1100 different patents were awarded him during his lifetime.

By doing all of the things he did, Thomas A. Edison created many great markets. He established the need for mass employment. He made our world a safer, a better and a more pleasant place in which to live.

Insistence on quality and thoroughness which characterized the work in his research laboratories and in his factories guides the Thomas A. Edison Industries today. Thinking is still on a 24 hour shift in the Edison Laboratories and in the factories, thousands of pairs of hands continue their work for the benefit of mankind.

AMONG THE PRODUCTS OF THE THOMAS A. EDISON INDUSTRIES ARE EDIPHONES . . . FOR DICTATION, STORAGE AND PRIMARY BATTERIES, SPARK PLUGS, MAGNETOS, IGNITION COILS, GENERATORS, ELECTRICAL CONTROLS, CEMENT, MEDICAL GASES, NURSERY FURNITURE AND MANY OTHER SMALL AND LARGE MANUFACTURED ITEMS FOR INDUSTRY.

Thomas A Edison INCORPORATED • WEST ORANGE • NEW JERSEY

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The compiler wishes to thank Carlton E. Tucker, '18, Professor of Electrical Engineering, and Wilmer L. Barrow, '29, Assistant Professor of Electrical Communications, for their aid in planning the material included in this list. Copies of this and the preceding nine in the series may be obtained from the Institute Librarian.

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THE ENDURING FREE SOCIETY

(Continued from page 369)

follow the course of the evolution of communism in Russia, and see if you do not feel that it is worth while to attempt to keep the structure of American society fluid. Need we turn to right or left? Is there not a middle road by which free institutions will survive even in these perilous times?

How do we proceed down this middle road? you may ask. To my mind, the first requirement is a recognition of the validity and vitality of the American tradition of a casteless nation. We must decide what constitutes the American way of life. Today such noble words as "democracy" and "liberty" must be counted as mangled victims of this turbulent decade. The word democracy has been so debased by our friends the Communists, in their efforts to hold a popular front, that most people are wary of it. On the other hand, some of our friends in the Liberty League seem to have ruined the word liberty, at least for all who are loath to equate America with extreme conservatism or the perpetuation of a ruling caste. Our real problem is to evolve a satisfying picture of American society to which we may pledge our faith. And this picture must, I believe, portray a nation in essence still pioneering — a land both free and democratic. I suggest that every new development in politics or economics be tested by these simple questions: Does the proposal make for a more or a less highly stratified society? Does it lessen or increase the fluidity of our social structure? Does it give more promise or less promise of greater opportunity for our able youth?

I can sum up my argument in a few words: The American way of life has been unique; it is founded not so much on our political or economic institutions as on the mobility of our society — the relative absence of a ruling class. The unique features of this country have been particularly favorable for the development of a business civilization, with its attendant philosophy of liberalism. If we are to preserve this civilization, we must endeavor in every way to prevent either the establishment of a permanent ruling caste — a plutocracy — on the one hand; or, on the other, a regimented collectivistic state.

As I have already said, you, as engineers, will be working at the interface between science and society. You will be in a special position to understand the significant interrelation of industry, science, and our social system. You will recognize in every walk of life the extreme importance of the pioneer — the exceptional man who can turn the unexpected corner. You will value the political and economic freedom which gives such men the maximum chance to succeed or fail. All of you in your own lives will be participating directly in building the America of the future. Trained scientists, your skills will perhaps count more than those of many other men. I wish for you, even more than the flowering of your special talents, faith and courage in the days to come — faith in the civilization you gladly labor to pass on to later times; courage to believe in the future of that type of society, (Concluded on page 394)

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THE ENDURING FREE SOCIETY

(Concluded from page 392)

that way of life, to which you can give your deepest loyalty. Once you have a clear-cut picture in your mind of what you desire for this nation, once you have courage to believe in your own vision, then your personal problems will fall into their proper place. You can rejoice that you have lived to forward a new experiment in the history of the human race.

TECHNICAL MEN IN A REPUBLIC

(Continued from page 371)

the course is set, this ingenious device, as you know, keeps the ship straight on its course, regardless of wind, wave, or current. It carries in its mechanical brain a highly developed sense of responsibility, another earmark of a really well-trained technical mind. As Phillips Brooks remarked years ago: "No man has come to true greatness who has not felt in some degree that his life belongs to his race and that what God gives him He gives him for mankind." Never in our country's history has a sense of personal responsibility toward economic and public questions been so imperatively needed as today. Obviously no system of government or economics can rise higher than the collective intelligence and character of the individual citizens who compose it. Representative democracy is the hardest kind of government to operate, but to strong men who are willing to pay the price in personal effort, it yields the rich spiritual values of personal freedom.

For several generations now, the vast majority of American businessmen and professional men have completely neglected the study of the political and spiritual principles on which our political, economic, and civil liberties rest. We have smugly assumed that our American system was safe and secure, and that we could enjoy the blessings of personal freedom without assuming, as individual citizens, any responsibilities for its continued maintenance. The events of the past ten years have rudely dispelled that fatuous notion, and today millions of otherwise intelligent Americans are floundering — puzzled and disheartened — trying to live without a political and economic philosophy. To do so successfully is impossible.

As a great industrial nation, we have long been accustomed to plan ahead; hence national economic planning has something about it that appeals to almost everyone at first blush. It really rests, however, on a series of delusions. Our national economic planners are, in fact, the modern prototypes of the medicine men of our barbaric ancestors. These economic planners actually believe that modern science, if only placed at the behest of all-powerful government, can make the springs of plenty flow for everyone, with little work and sacrifice on anybody's part. They believe that somewhere there actually exist individuals who have the capacity to plan the economic affairs of the whole nation so as to insure a constantly rising standard of living. In reality, there are not enough information and ability available today to correlate the activities of any single industry to accomplish that (Concluded on page 396)

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TECHNICAL MEN IN A REPUBLIC

(Concluded from page 394)

objective, let alone correlate the infinitely complex interests of the entire country. The stagnation and loss of impetus which would result from the dilution of personal responsibility and initiative under such a system would be appalling. Furthermore, if the government once started to plan the affairs of our basic industries, the process would inevitably have to be extended to every phase of our economic life. There would be no stopping. As Stalin said in 1934: "Without getting rid of capitalism and abandoning the system of private ownership of the means of production, you cannot create planned economy."

Make no mistake about this, moreover: If a group of men — no better, no worse than the rest of us — calling themselves government, began to plan the economic affairs of this nation, presumably for the greatest good of the greatest number, they could not permit any citizen, no matter how well trained technically or how well intentioned he might be, to throw monkey wrenches into their carefully laid programs. Hence government, in order to make its economic planning effective, would inevitably have to control all agencies that form public opinion — the newspaper, radio, school, and church. In common with many of you, I have personally seen that process at work in Germany, Italy, and Russia. We want none of it in America. Private free enterprise — with reasonable umpiring by government to insure fair play — representative democracy, and civil and

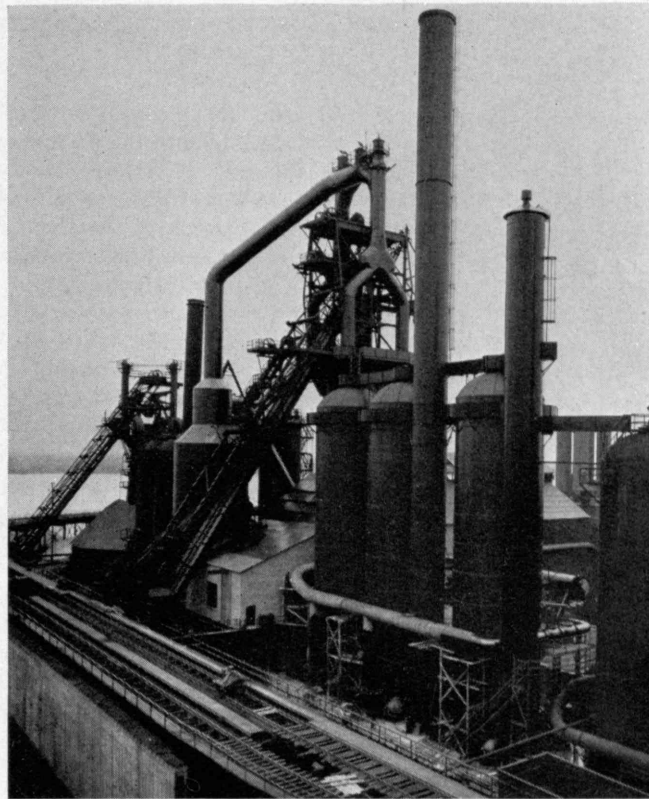
religious liberty are the three inseparable supports of personal freedom. They must stand or fall together. Our forefathers came to these shores imbued with a sense of deep personal responsibility not only toward moral questions but toward their own material success. Under the impact of the current approach to the problem of government, "What can I get out of it, whether I am entitled to it or not?" we have drifted far from our ancient moorings. Today every technically trained man in the Republic has a peculiarly grave responsibility: to contribute, liberally and unselfishly, through clear scientific thinking as opposed to crowd emotions, to an intelligent solution of our pressing national problems.

Education that does not mold the moral sense of a human being as well as his reasoning powers is lethal poison to the individual and social dynamite to the body politic. Every once in a while, I am told, an electron jumps out of its regular path in an incandescent lamp. The equation expressing the possibility that any specific electron will so do, is in direct accord, I understand, with the mathematical laws of probability. Hence a great modern scientist has concluded that so-called natural laws are merely "summations of statistical averages." If in connection with the R of rectitude the technically trained man, in his human relationships, should now and then jump the track like a vagrant electron, he, like all the rest of us poor human beings, may find consolation in the fact that our vagaries of conduct merely reflect a "summation of statistical averages," which we must keep at as high a level as Divine aid and personal intelligence will permit.

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NEWS AND THE STATE

(Continued from page 373)

what his personal presence in Paris in advance of the tragic news would do was based on his complete understanding of mass psychology. He knew that his presence would be an antidote to the despair occasioned by a realization of disaster. No matter how tragic, when the populace finally received the news it would be that of a disaster long past, of which only the general outlines would be known.

Contrast that with present conditions. Today millions of people throughout the world are receiving daily, hourly, and almost by the minute, complete news not only of disasters but actually of disasters in the making. Very frequently we receive news piecemeal as the disaster develops — a sort of preview as it were. This is particularly true here in America. Under these conditions it seems to me inevitable that our reactions to events which affect us and our future well-being cannot possibly be the same as they would be if we were to be informed at a much later date.

Not only is the magnitude of our intake of news and information vastly greater than that of any previous time but, in addition, matters of real importance are so inextricably mixed up with a mass of essential triviality that it is frequently difficult, if not impossible, to disentangle the two. The mere magnitude of the facilities for collection, transmission, and dissemination of intelligence, and the desire fully to employ these facilities make this difficulty inevitable.

In this maze, it is frequently the trivial rather than the important which dominates our emotions and hence our reactions and actions. When I speak of trivial or inconsequential, I mean things which are trivial or inconsequential as related to the main course of events. Each such item in itself may justify a strong emotional reaction but be of no importance whatever when it comes to determining how we should *act*. In a war like the present one in Europe, the loss of a battleship or the bombing of a city or the loss even of an army is in itself a tragedy, but it may be, and probably is, an insignificant triviality in determining the ultimate outcome of the conflict. Mass action based merely on the emotions thus developed is more likely than not to be wrong. Back in the time of the Napoleonic wars to which I have alluded, and in all recorded time before the advent of modern facilities, most of the trivial and inconsequential trappings of events were (Concluded on page 400)

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NEWS AND THE STATE

(Concluded from page 398)

extracted from the news before that news reached the ultimate consumer. Thus it was only major results of past events which reached men and women and impelled them to future action.

Before the advent of these modern methods of communication, people were not, it seems to me, so likely to be moved by their emotions as they now are. They were more likely to be moved by their reason, simply because they were compelled to deal with the prospective effects of past events. Now, immersed as we are in this vast flood of information, trivial and important, I for one find myself continually confronted with a tendency to be actuated by my emotions rather than by my reason.

There is no cause to anticipate any return to a more leisurely method of news transmission. Quite the contrary. Our problem for the future is one concerned with operation of a world actuated largely on an emotional, rather than on a reasoning, basis. In the circumstances it seems to me that the very facility and adequacy of our reporting of events impose upon us an added burden of trying to avoid being driven into mass action solely on the basis of a succession of emotional eruptions.

This, it seems to me, is possibly the greatest of the social problems which science, applied to the art of communication, has posed for mankind.

WORLD NEWS GATHERING

(Continued from page 375)

cation were immediately disrupted. Cities which before the war were unimportant as communication centers suddenly became transcendently vital. Warsaw, for example, immediately became important and remained so until the Polish government collapsed under the impact of German and Russian drives. Bucharest, Budapest, Stockholm, and Copenhagen also loomed as transmission centers as the war area spread.

In fact, so rapidly did the transmission centers change during the early stages of the war that we could never be sure from what point we would hear from our own men. George Kidd of our Berlin staff, who had been assigned to cover the Danzig front late last August, had to leave there suddenly. Within twenty-four hours thereafter, we began to receive his dispatches from Riga,

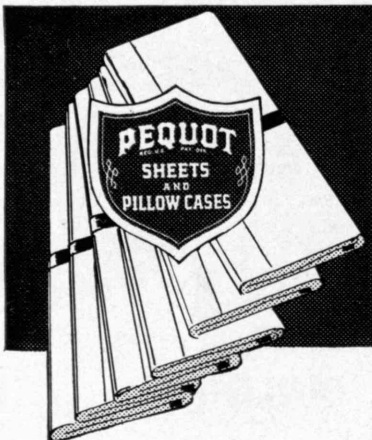
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by way of Moscow for cables and by way of Copenhagen for telephone and radio. Ferdinand Jahn's filing from Bucharest, which city early in the war proved so valuable as a relay center after the fall of Warsaw, began to reach New York by radio, relayed from Rome.

Norman Deuel, our Moscow manager for several years, had been in Helsingfors, waiting for eventualities, for quite a few weeks before the war started in Finland. When the Germans suddenly invaded Norway and took Narvik, Peter Rhodes of the United Press staff was not there by accident. He had been waiting there for several days before the invasion started. These examples reveal that possession of the properly trained manpower is not enough to assure proper coverage. It is necessary also to have the right man at the right point at the right time. Yet even that is not sufficient unless facilities are available for telling the world the story.

When the Russian attack on Finland began last winter, Norman Deuel was awakened by the first bomb dropped on the Helsingfors airport. He telegraphed the first flash on the news and, leaving his wife to duplicate the flash by telephone to Copenhagen, rushed out to get details. Just as he returned to his hotel, he was knocked down by a bomb which destroyed a near-by building. Lying on the floor long enough to let the splinters settle, he arose to put in an urgent telephone call to Copenhagen. While he stood waiting for the call to come through, the dome of the hotel lobby collapsed in a crash of glass. But Deuel got his call through and completed it, although that entire section of Helsingfors was a rubble of broken glass and ruined buildings, with the dead lying in the streets.

As part of our plan to establish proper communications, we also prepared several years ago a transmission center in Amsterdam which was able to communicate efficiently and rapidly with North and South America. We maintained a very large bureau there, staffed by United Press men of various nationalities — British, French, German, Dutch, and American. As soon as Germany invaded Holland on May 10, the Amsterdam personnel situation became difficult. Three British United Press men had to be evacuated to London two days later. They arrived safely after a perilous journey, during which convoyed busses en route to a channel port were constantly strafed by German bombers.

I think it must be evident to anyone reading the dispatches that the coverage of this war, so far as comprehensiveness and volume are (*Concluded on page 402*)

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WORLD NEWS GATHERING

(Concluded from page 401)

concerned, is much better than that of the World War. There are no more cables now than during the conflict of 1914-1918, but technical advances have greatly expanded the potential volume of each cable. In addition, the use of radio has developed far beyond anything even conceived during the former war. These developments have made possible the acceleration of news transmission in all classifications of service. In my opinion newspaper correspondents themselves have also considerably improved their technique and have been able to put into effective use the lessons learned during the great war of twenty-five years ago. During that war if a news agency received by cable and radio 2,000 to 3,000 condensed words a day from Europe, that was a pretty large filing. I think it is no exaggeration to say that during the present war the volume received from Europe must be eight or ten times that. Although advances in cable and radio technique have brought about very substantial decreases in the cost per word of press tolls, the cost of covering the present war is several times as great as was that of its predecessor. One reason is the vastly expanded interest in war news.

Comparison of the content of the average newspaper in this country with that of any newspaper in any totalitarian country in Europe shows a startling difference. It will be noted at once that the American newspaper publishes statements on all sides of all questions. The totalitarian newspaper publishes only what the government wants it to print. The American newspaper will publish what the reader wants to read. The totalitarian newspaper will publish only what the government wants the reader to read.

Let no man make any mistake about the sanctity of that provision of our Bill of Rights which refers to freedom of the press, freedom of speech, freedom of worship, and freedom of assembly. Let no man delude himself into the belief that some slight violation of freedom of the press or of speech might be tolerable. There is no such thing as a *slight* violation of freedom of the press or of speech or of religion. Any violation is at least potentially mortal. All that needs to be remembered is that once upon a time there was freedom of the press, of speech, of religion, in the continental countries which are now totalitarian.



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RADIO IN WORLD AFFAIRS

(Continued from page 377)

free press. The report of an address by Hitler in the daily press would hardly arouse suspicions that this or that newspaper was pro-German. Neither would the publication of the text of Winston Churchill fix the idea in the reader's mind that a journal was unalterably aligned with the interests of the British Empire. Yet no sooner will Hitler have uttered his last word over our networks than protests will flood the switchboard at Radio City. The National Broadcasting Company, we are certain to hear, is either knowingly or stupidly lending American radio facilities to the spread of insidious foreign propaganda. Similar protests, though usually in smaller volume, will arrive shortly after the broadcast of a British or French political leader. We are called "fascist" whenever the N.B.C. networks carry the voices of Hitler or Mussolini. We know that the label of "communist" or "socialist" will be freely applied whenever our microphones have been placed at the disposal of Earl Browder or Norman Thomas, whether these men speak on domestic or foreign issues. We are "capitalist" and "laborite," and "radical," "conservative," and "liberal" by turn. And to different persons we may even appear to be "patriotic" and "subversive" at one and the same time.

This is as it should be. Whatever the reason for the protests — whether it be that the American listener is more vociferous than the foreign or that, with three competing networks clamoring for his attention, he feels perfectly free to criticize — we welcome them. The variety of epithet indicates that we are near to the ideal of a fair balance.

Now, speeches on world affairs of wide public interest are almost invariably expressions of opinion. They are usually propaganda, if you will, for the adoption of the speaker's special point of view. It follows, therefore, that much of broadcasting's service to the listener, with respect to both domestic and foreign affairs, is tied up with freedom of the air. This matter has been widely, though not always intelligently, discussed. Too often it is assumed that the rules governing free speech or a free press apply, without change, to radiobroadcasting. They do not. Theoretically everyone may exercise the right of free speech simultaneously. There would, of course, be no audience for any of the speakers, but the right would be exercised all the same. Further, there would seem to be no great obstacle to the publication, by any interested person, of a newspaper or pamphlet and its subsequent distribution by hand or mail.

But the number of radio stations is limited by the number of channels for domestic broadcasting at the disposal of our government. Also, since the broadcasting day generally extends to not more than eighteen hours, time is limited. Within these bounds broadcasting must try to satisfy all demands for time on the air for the discussion of controversial public issues. The question of American aid to belligerents is a single instance. The issue of international trade agreements is another. In presenting broadcasts of opinion on such subjects, the National Broadcasting Company applies the rule of equal opportunity. Stated differently, N.B.C. tries to present speakers of as nearly equal prominence as possible at equally favorable periods of the day over stations covering the same areas. We are never completely successful in applying the rule, but we always aim at the ideal of mathematical equality. (Concluded on page 404)

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RADIO IN WORLD AFFAIRS

(Concluded from page 403)



So long as broadcasting lends itself to the expression of opinion, we can no more avoid spreading propaganda than can the newspaper which carries an account of a speaker's message. The danger is not in spreading propaganda but in the elimination from the air waves of all propaganda except one particular variety. Free discussion is democracy's way of settling an issue.

I pointed out earlier that under the American system of broadcasting, radio is a private enterprise. It may be wondered why any network company should make an intense effort to cover world affairs for its listening audience when such a service produces no revenue and is, in addition, highly expensive. The answer is to be found in the fact that American radiobroadcasting is fiercely competitive. Whatever success comes to the broadcaster must be measured in terms of his listening audience. To hold the interest of that audience, the broadcaster must provide a free program service equal to, and preferably better than, the competing services. His constant fear is the slight movement of the knob that tunes out his program and brings in one of those offered by his rivals. This will explain why year after year the number of programs traveling westward over the Atlantic far exceed those eastbound for rebroadcast in Europe and why American radiomen are so hungry for scoops.

In the past, critics of the American system of broadcasting have singled out its commercial nature as a glaring weakness. Government radio, it was confidently asserted, could devote itself entirely to the work of public education and the spread of culture, whereas private radio is forced by necessity to devote large portions of the broadcasting day to making a living. The turn of events has brought some surprising changes in attitude. Without fear of contradiction it may be said that in every country where government has exercised a control over radio, there also the hand of the censor has been felt in the selection and presentation of news and opinion. To the extent that this control has been exercised, radio has ceased to be a faithful mirror of world affairs or an adequate instrument for the expression of public opinion.

Surely the cost of listening to a few commercial announcements, even though they recommend the purchase of a particular kind of cigarette or tooth paste, is a small price to pay for a free system of radiobroadcasting. American radio has achieved independence by taking its own risks as a business organization. Its success as an advertising medium has given it the means for establishing a widespread system for gathering and circulating news and opinion, for breaking new ground in mass education, and for promoting the ideals of religion and of the liberal democratic way of life. It is not perfect, but it is far from becoming the complaisant servant of any single group. So long as the success of radio depends on the number of listeners whose interest can be held, the broadcaster will strain every nerve to serve the public to the best of his ability and the limits of his purse.

And let us not forget that wherever radio has lost its freedom, there also have disappeared the parallel freedoms of the press and of education and often of religion.

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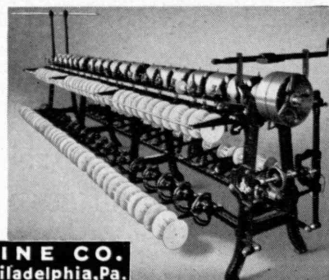
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of
1940 GRADUATES

(as of June 6, 1940)

The results of a recent employment survey of the Class of 1940 are shown in the table below:

EMPLOYMENT STATUS	<i>Recipients Doctor's Degree</i>		<i>Recipients Master's Degree</i>		<i>Recipients Bachelor's Degree</i>		<i>All Groups</i>	
1940 GRADUATES as of June 6, 1940	No.	%	No.	%	No.	%	No.	%
Have Accepted Employment	29	70.7	182	88.8	318	70.8	529	76.1
Unclassified	12	29.3	23	11.2	131	29.2	166	23.9
TOTALS	41	100	205	100	449	100	695	100

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CHECK LIST OF THE ACTIVITIES AND ACHIEVEMENTS OF M.I.T. ALUMNI AND OFFICERS

Honors and Advancements

- ¶ CHARLES T. MAIN '76, elected honorary member of Tau Beta Pi.
- ¶ EDWIN BERGSTROM '99, chosen initial President of the National Architectural Accrediting Board.
- ¶ HAROLD B. HARVEY '05, re-elected President of the Brass Forging Association.
- ¶ EDWARD L. RYERSON, '09, elected chairman of Inland Steel Company, Chicago.
- ¶ JEROME C. HUNSAKER '12, elected member of the American Philosophical Society and of the National Research Council's special committees on aircraft production, selection of aviators, research in industry, and Army Air Corps problems.
- ¶ H. E. LOBDELL '17, appointed engineering adviser on the special board of the *American Scholar*.
- ¶ RAYMOND E. PATTEN '21, given a \$1,000 American Design Award for his stove design.
- ¶ GEORGE B. HOADLEY '32, appointed assistant professor in the electrical engineering department of the Polytechnic Institute of Brooklyn.
- ¶ ALEX C. BURR '32, elected President, and LLOYD K. CLARK '38, Secretary-Treasurer, of the North Dakota Society of Engineers.
- ¶ PHILIP M. MORSE, Staff, awarded an honorary doctor of science degree by the Case School of Applied Science.
- ¶ SVERRE PETTERSEN, Staff, selected to present the Wright Brothers Lecture for 1940.

Written

- ¶ By SAMUEL C. PRESCOTT '94 and CECIL G. DUNN '30, *Industrial Microbiology*, McGraw-Hill.
- ¶ By CARLETON ELLIS '00, *Printing Inks*, Reinhold.
- ¶ By CARLE R. HAYWARD '04, MASANABU ISAWA, guest student, and EUGENE M. THOMAS '39, "Effect of Atmosphere During Melting and Casting of Copper," *Journal, Institute of Metals*, volume 66, part 4.
- ¶ By C. LYMAN ANSON '06, *Alaska Challenge*, Dodd, Mead.
- ¶ By M. HERBERT EISENHART '07 and Everett W. Melson, "Development and Manufacture of Optical Glass in America," *Scientific Monthly*, April.

¶ By ROBERT S. HARRIS '28 and L. MALCOLM MOSHER '29, "Comparison of Nutritive Value of Refined Coconut Oil and Butterfat," *Food Research*, March-April. And with JOHN W. M. BUNKER, Staff, "Relative Efficiency of Active Wave Lengths of Ultraviolet in Activation of 7-Dehydrocholesterol," *Journal of the American Chemical Society*, March.

¶ By DONALD B. SINCLAIR '31, "A Voltage Multiplier for Use with the Vacuum-Tube Voltmeter at Radio Frequencies," *General Radio Experimenter*, May.

¶ By DAVIS R. DEWEY, Emeritus, "The Halfway Point," *Journal of the American Statistical Association*, March.

Speakers

- ¶ ELMER A. HOLBROOK '04, on "The Engineer and Labor," at the third annual engineers' night of the Aluminum Company of America.
- ¶ HAROLD V. O. COES '06, on "Technique of Estimating," at a meeting of the New Haven Chapter of Cost Accountants and the American Society of Mechanical Engineers, April 23.
- ¶ EDWARD L. MORELAND '07, on patent rights on research findings developed in university laboratories, at the meeting of the Industrial Research Institute, April 26-27.
- ¶ DOUGLAS C. MCMURTRIE '10, on the invention of printing at the Advertising Club of Boston's luncheon, and at the Massachusetts Press Association meeting, May 14.
- ¶ PERCY BUGBEE '20, at the forty-fourth convention of the National Fire Protection Association, May 9.
- ¶ DUGALD C. JACKSON, JR., '21, at the sixth annual convention of the Illinois-Indiana section of the Society for the Promotion of Engineering Education, April 21.
- ¶ F. ROLF MORRAL '32, on x-ray and electron-diffraction methods for metallurgical research and a study of tarnish on galvanized sheets by an electron-diffraction examination, at a closed session of the galvanizers committee, sponsored by the American Zinc Institute, April 12, and on "X-Ray Analysis of Corrosion Products from Galvanized Sheets," seventy-seventh general meeting of the Electrochemical Society, April 24-27.

¶ ERNST A. HAUSER, Staff, on "Recent Advances in Colloid Chemistry of the Clay Minerals," at George Washington University, April 3, and on "Color Reactions between Clays and Amines," at the Cincinnati meeting of the American Chemical Society, April 9.

¶ JAMES L. TRYON, Emeritus, on his intimate recollections of Edwin Arlington Robinson, with whom he was closely associated at Harvard, at the Colby chapter of Phi Beta Kappa, April 16.

DEATHS

* Mentioned in class notes.

- ¶ BENJAMIN R. TUCKER '74, June 22, 1939.
- ¶ J. EDSON YOUNG '79, April 15.
- ¶ WILLIAM P. TURNER '86, April 28.*
- ¶ WALTER H. GLEASON '87, May 3.*
- ¶ GEORGE F. HARDING '88, May 16.
- ¶ ARTHUR S. WILLIAMS '88, May 18.*
- ¶ ELIZABETH E. BICKFORD '90, April 1.*
- ¶ CHARLES O. CHURCHILL '90, 1937.*
- ¶ FREDERICK E. FOWLE '94, April 22.
- ¶ RUSSELL A. RICHARDS '94, December 1.
- ¶ ALBERT W. THOMPSON '96, May 18.*
- ¶ PERCY BLOOD '97, October 1.
- ¶ BENJAMIN S. HINCKLEY '99, May 6.*
- ¶ BARTON HASELTON '00, June 18, 1939.*
- ¶ CARLTON R. ROSE '01, March 7.
- ¶ HARRIET V. ELLIOTT '03, February 15.
- ¶ SUMNER E. BROWN '04, May 19.
- ¶ EDWARD A. BURKHARDT '05, May 9.
- ¶ WALTER M. BUTTS '05, May 15.
- ¶ PHILIP D. TERRY '10, May 4.*
- ¶ GEORGE H. ESTES '11, June 5.
- ¶ DENNIS F. MAHONEY '12, December 26.
- ¶ CHARLES V. REYNOLDS '12, May 13.*
- ¶ M. ALEXANDRA FRASER '17, April 30.
- ¶ JOHN W. BARROWS '23, December.
- ¶ MARSHALL G. MCCARROLL '28, May 9.*
- ¶ LYLE K. TANZER '33, April 24.
- ¶ OLIN INGRAHAM, Staff, May 10.

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Technology Club of Chicago

Our luncheons are drawing larger groups each month, our ranks of dues-paying members are still on the increase, and the spirit and enthusiasm for the Institute are on the upgrade. The Chicago chapter now boasts a very active employment committee, headed by William Steinwedell '25. This committee, working in conjunction with the Placement Bureau at the Institute, is in touch with employers in the Chicago area, and interviews and recommends Chicago Tech men who desire changes in employment. In view of the fact that many Chicago employers prefer graduates of local institutions, this committee has a big job ahead. The reason for this preference is that the majority of engineers hired in this locality are engaged for a specific job. The specific job for a man just out of college is usually not too attractive. Since the average Technology man soon outgrows a limited range of employment and begins clamoring for advancement, the employers prefer the less ambitious and more contented type. Therefore, this committee has not only the task of corraling jobs for prospective employees but the more important one of overcoming a deep-seated prejudice.

Our scholarship committee met recently with H. E. Lobdell '17, Dean of Students, to interview candidates for the regional scholarship and secondary scholarships. The committee consists of the Institute's Honorary Secretaries in Illinois: Louis H. G. Bouscaren '04, Arthur B. Brand '26, Edward Pennell Brooks '17, Albert J. Browning '22, Charles W. Cristall '23, Edmund G. Farrand '21, Lonsdale Green '87, Philip W. Moore '01, Ralph Sargent '18, William C. West '11, and Nelson C. Works '17. All of the candidates were outstanding scholastically, and most of them were outstanding in extracurricular activities. The choice was a difficult one. The regional scholarship carries a direct award of \$600 for the first year at M.I.T. The secondary awards are proportionate amounts of the tuition. — NELSON C. WORKS '17, *Secretary*, Paine Webber and Company, 209 South La Salle Street, Chicago, Ill. ANDREW P. REBORI '39, *Review Secretary*, 1328 North State Street, Chicago, Ill.

Technology Club of Northern Texas

On April 9, Horace S. Ford, Treasurer of the Institute, addressed the Club at its annual dinner, at the Dallas Athletic Club. Mr. Ford gave a very interesting talk illustrated with lantern slides. Particular emphasis was laid on the financial

status of the Corporation and of the Institute, showing the classification of investments and present income therefrom. Attention was drawn to the investment change from railroad and other time-honored bonds to stocks, government securities, and others in order to obtain a more liquid position and, in some cases, a higher return. The relation of income from tuition to income from endowment was shown, as well as the operation of the large student-loan fund, which was shown to have been very helpful in overcoming the present relatively high tuition. A great deal of interest was evinced in Mr. Ford's report on the advanced research activities and accomplishments of the Institute. Technology is at the fore in taking an active part in the industrial and scientific advancement of the day. All those present enjoyed Mr. Ford's talk immensely, and those who were at the Institute while he was bursar were glad to renew acquaintance with him.

On the following day, your Secretary had the pleasure of driving Mr. Ford to San Antonio and Houston, visiting on the way Baylor University at Waco, University of Texas at Austin, Alamo City Commercial College at San Antonio, and Rice Institute at Houston, Texas. At Houston, the local alumni club had Mr. Ford as its guest speaker at a dinner at the Press Café. — From Houston we drove to New Orleans, La., by way of Baton Rouge, where we visited Louisiana State University. At New Orleans we looked over Tulane and Loyola universities. — E. G. SENTER, JR., '17, *Secretary*, 210 Construction Building, Dallas, Texas.

Detroit Technology Association

The final meeting of the season was held in the Intercollegiate Alumni Club, Penobscot Building, on June 4, at 7:00 p.m. Cyril H. Cane spoke on "Great Britain Today." Mr. Cane was well qualified to discuss the subject, as he is the British consul at Detroit. — PERRY MAYNARD '24, *Secretary*, 17701 Manderson Road, Detroit, Mich.

Technology Club of Hartford

Hartford Alumni held a dinner meeting at the City Club on April 12, at which two members of the Connecticut Health Department — Dr. M. H. Griswold, chief of the division of cancer research, and H. F. Hirsche, statistician — gave an illustrated discussion of "Aspects of the Cancer Problem in Connecticut." J. Henry L. Giles '29 presided. At the short business meeting following the dinner, it was suggested that, as a means of promoting interest in M.I.T., the students of high schools be invited to club meetings to meet the Alumni. It was voted to send \$10

to the student athletic fund. Members attending the meeting were Edwin P. Tripp '04, Malcolm G. Wight '06, George L. Mylchreest '10, Robert H. Mather '11, Roger W. Davis '12, Arthur F. Peaslee '14, Millard Knowlton '18, Gustav O. Fredrickson '21, Andrew S. LaPenta '22, Elbert C. Brown '24, Thomas D. Green '26, Earl C. Wheeler '26, J. Henry L. Giles '29, Harold C. Plant '30, Henry J. Chapin '32, Reinhardt C. Sabel '33, G. Dudley Mylchreest '36, Louis J. Proulx, Jr., '36, Franklin S. Atwater '38, Willard R. Beye '38, and Henry C. Littlejohn '39.

The Club held its annual meeting and ladies' night on Tuesday, May 21, at the Indian Hill Country Club, Newington, Conn. J. Henry L. Giles '29 and John G. Lee '21 were re-elected President and Vice-President, respectively. Other officers elected were Andrew S. LaPenta '22, Secretary-Treasurer; Louis J. Proulx, Jr., '36, Assistant Secretary; James A. Burbank '16, Director for two years; Arthur F. Peaslee '14, candidate for Alumni Council representative; and Millard Knowlton '18, Librarian.

Following the election of officers, it was voted that the President appoint a committee to make recommendations regarding a possible revision of the constitution. The President then announced that the arrangements committee for the annual outing, scheduled for Saturday, June 29, with the Springfield, Mass., and New Haven, Conn., clubs as guests, includes: Edwin C. Alden '95, Everett O. Hiller '04, George L. Mylchreest '10, Frederick O. A. Almquist '23, and Earl C. Wheeler '26. — The principal speaker of the evening was Sidney Edwards, managing director of the Connecticut State Development Commission, who spoke on the activities of his commission in furthering the interests of Connecticut in industry, agriculture, and recreation.

Those attending were Mr. and Mrs. Edwin C. Alden '95, Malcolm G. Wight '06, Mr. and Mrs. George L. Mylchreest '10, Mr. and Mrs. Roger W. Davis '12, Arthur F. Peaslee '14, Millard Knowlton '18, Warren J. Scott '18, Mr. and Mrs. Horace B. Tuttle '21, Andrew S. LaPenta '22, Elizabeth C. Nickerson '23, Thomas D. Green '26, Mr. and Mrs. J. Henry L. Giles '29, G. Dudley Mylchreest '36, Louis J. Proulx, Jr., '36, and Franklin S. Atwater '38. — ANDREW S. LAPENTA '22, *Secretary*, 20 Rosedale Road, West Hartford, Conn.

M.I.T. Club of East Tennessee

The annual meeting and dinner of the Club were held at the Farragut Hotel, Knoxville, on April 29, at 6:30 p.m., with Dana Wood '06 presiding. Our guests were Paul L. Hornby, a native of Denmark, and Rolf T. Retz of Norway, who gave very interesting talks on their

respective countries. Through the courtesy of Mr. Frazier of WROL, the local broadcasting station, we were furnished with the latest war news, which was read by President Wood. Mr. Brumley of the Tennessee Valley Authority furnished the music for several Technology songs. Reports of the Secretary and Treasurer were presented and accepted. The report of the nominating committee was presented by Joseph C. Nowell '23, and the result of the balloting showed the following elected: Emil S. Birkenwald '23, President; Thomas D. Leiby '17, Vice-President; Richard E. Hickman '36, Treasurer; and Robert E. Crawford '28, Member at Large of the executive committee.

The following members were present: George E. Sylvester '87, Joseph H. Kimball '94, Arthur R. Holbrook '04, Dana Wood '06, Bernard R. Fuller '09, Albert S. Peet '09, Phifer Smith '09, Theodore B. Parker '11, Gene N. Burrell '13, William P. Bealer '17, Emil S. Birkenwald '23, Robert T. Colburn '23, Ralph B. George '23, Joseph C. Nowell '23, B. E. Morris '26, Walter K. Johnson '27, Robert E. Crawford '28, Howard P. Emerson '28, George P. Palo '28, Andrew T. Regan '33, Raymond W. Smith '33, Joel B. Stevens, Jr., '33, and Richard E. Hickman '36. — ALBERT S. PEET '09, *Secretary*, Knoxville Glove Company, Post Office Box 138, Knoxville, Tenn.

M.I.T. Club of Northern New Jersey

If there has existed any doubt that the Club is a well-organized group and an important part of the Alumni Association, it was dispelled on May 2 at the annual banquet in the Newark Athletic Club, for which affair 297 "good fellows got together" in gay and festive mood. The telephone squadron of the membership committee were invited to a cocktail reception to the speakers and guests in the M.I.T. room before the excellent dinner. The party was full of life and spring fever and gave forth robust song under the leadership of Jack Teeter '22. By courtesy of *The Tech*, a copy of the Open House issue, which also carried the announcement of the New Jersey banquet, was given each man as he entered.

William B. Coleman '24, President, introduced the others at the speakers' table: Allan R. Cullimore '07, Arthur W. Lunn '09, Alfred I. Phillips '10, James F. Maguire '17, F. Alexander Magoun '18, Arthur E. Windle '18, Alfred T. Glassett '20, Maxwell K. Burckett '21, Carole A. Clarke '21, William H. F. Rose, Jr., '21, Charles George Dandrow '22, William J. Grady '22, Clayton D. Grover '22, Jack H. Teeter '22, Miles Pennybacker '23, D. Arthur Straight '24, Earl C. McMahon '26, Warren H. Dolben '30, and Edwin H. Armstrong.

The club business of the evening was the election of officers for the ensuing year. So carefully had the nominating committee, (Maguire '17, McNeill '17, Vilett '22, Coleman '24, and Clarke '21, Chairman) made up the nominations that the matter was quickly dispatched, the

Secretary being requested to cast one ballot for the slate as presented by the committee. Miles Pennybacker, who has worked assiduously in behalf of the Club, becomes president for 1940-1941. He will be supported by a strong cast of assistants. Because it is long and merits prominence, the entire list of officers will be printed in a later issue of *The Review*. President Coleman read a telegram from Dr. Compton extending thanks for past support and wishing the Club and its officers continued success in the future.

With the routine business out of the way, President Coleman turned the evening over to toastmaster Art Lunn, who forthwith proceeded, in his inimitable way, to introduce the speakers. — F. Alexander Magoun, Professor of Humanities, lived up to the reports of his press agent by quoting "Confucius" in his opening sentence. Magoun presented his ideas so ably and with such sparkling wit, even on an empty stomach (bad weather grounded his plane and prevented his arrival for dinner), that we dare not speculate what he would have given us with a full stomach. He emphasized some of the shortcomings of a technological education, particularly those which relate to the relations between individuals and between the employer and the employee. To him the word "together" is the greatest word in our language. It is vitally important that students at Tech be taught how to work together rather than compete with each other. To accomplish this purpose Professor Magoun has built up a course in which the fundamentals of psychology and human relationship are demonstrated to the student by application of the laboratory method. The student works out actual personnel problems like those which he will confront after he leaves the Institute. He includes in this work not only relationships with the student fellowman but also the problem of choosing the right partner for the big job of marriage. Professor Magoun's presentation was not only interesting but greatly stimulating to discussion, and it is safe to say that had time permitted, he would have been kept on the speakers' platform until well after midnight.

To balance the engineering of human nature, the Club was exposed to some of the fundamentals of one of the most sensational engineering developments in the field of radio: Frequency modulation, which has been the subject of so much controversy, was described and demonstrated by its inventor, Edwin H. Armstrong of Columbia University. Major Armstrong has been one of the outstanding pioneers in radio and combines with his inventive genius the unique ability of carrying his developments forward to commercial success. With suitable apologies to the communication engineers who were present, but with commendable concern for the rest of us, Major Armstrong presented a layman's picture of how frequency modulation varies from amplitude modulation and described some of the difficulties which stand in the way of FM's commercial application.

It is interesting that as these notes were being written [May], the newspapers carried the report that high-frequency channel No. 1 had been assigned to commercial frequency-modulation broadcast.

At the close of his discussion, Major Armstrong presented us with a special demonstration of frequency-modulation reception. The receiver was installed in the banquet hall, and a special program was broadcast from Major Armstrong's transmitting station at Alpine, N.J. The program consisted of instrumental music and various sound effects, such as water being poured into a glass and a nail being driven into a block of wood. The absence of noise and static and the fidelity of reproduction made it difficult to believe that the performance was not being held right there in the banquet hall. — The program ended with the singing of the "Stein Song," bringing to a close a successful season and an outstandingly pleasant and stimulating annual banquet.

— CLAYTON D. GROVER '22, *Secretary*, Whitehead Metal Products Company, Inc., 303 West Tenth Street, New York, N.Y. FREEMAN B. HUDSON, JR., '34, *Assistant Secretary*, Colgate-Palmolive-Peet Company, 105 Hudson Street, Jersey City, N.J. — NEWTON S. FOSTER '28, *Assistant Secretary*, 73 Daniel Avenue, Rutherford, N.J.

Technology Club of New York

A dinner preceded the annual meeting of the Club, which was held on May 6 and attended by approximately seventy-five members. New officers elected for 1940-1941 were Charles George Dandrow '22, President; Edwin S. Burdell '20, Alexis R. Wiren '19, and William P. Winsor '27, Vice-Presidents; Elmer C. Hughes '31, Vice-President and Treasurer; John J. Murphy '23, Secretary; Alfred T. Glassett '20, James G. Walker '26, and Page E. Golsan '12, Governors serving to 1943; and William H. Mueser '22, Governor serving to 1942. Previously elected Governors who will continue to serve are Allen B. Bassett '26, and Robert M. Emery '34, to 1942; Constantine S. Dakakis '34, Robert E. Wilson '16, and William H. Latham '26, to 1941.

Immediately before the formal elections, Mr. Mueser paid tribute to the excellent administration of the retiring president, Mr. Glassett, who in six years transformed the Club from a struggling, insecure group to the present successful organization with its record membership and manifold activities. A rising vote of appreciation was accorded to Mr. Glassett by the members. — The new President, Mr. Dandrow, has been active in club affairs for the past three years, as a member of the board of governors. He was in charge of the last two annual dinners, both of which were outstandingly successful events.

In assuming the presidency, Mr. Dandrow expressed appreciation of the fine work accomplished by Mr. Glassett and his administration, and promised to continue the policies which have proved so successful. He made a plea for more par-

1888 Continued

plete relaxation from May until near November. My movements for these months are planned well ahead. . . . I will spend a part of the summer of course in the mountains and in my shop. . . . In a recent issue of *The Review* you gave me credit for being a poker player. Well, the poker was played in my room; but it was my roommate, Tom King, who was guilty. I have to claim an alibi as to cards; still, it made a good story. I may have done even worse things, but they have not been discovered by the public as yet. . . ."

And now we are sorry to have to record the passing of Arthur S. Williams, artist and metal craftsman, on May 18, at his home, 41 Hyde street, Newton Highlands, Mass. Williams was graduated with us from Course VI and for the next ten years was with the American Telephone and Telegraph Company in New York and Boston. From 1898 to 1902 he was secretary and treasurer of the Consolidated Machine Specialty Company of Boston. From 1902 he was instructor in the arts and crafts movement and had a studio in Boston where he gave lessons and made work of his own for sale. He was a member of the Society of Arts and Crafts of Boston and was senior warden of the Parish of St. Paul of Newton Highlands. Williams took a deep interest in the affairs of the Class and seldom was absent from a class dinner or reunion. He leaves his widow, the former Carrie A. Fisher; three sons, Shepard F., C. Morris, and Robert O.; two daughters, Barbara and Laura; and two brothers, Henry M. of Cambridge and Edward R. of Boston.

John W. Linzee of 848 Beacon Street, Boston, writes: "My son-in-law, Lieutenant Colonel Aimone Vanin, is in charge of the Italian Flying Corps at Palermo, Sicily, but later of Albania. This war hits my family connections very hard, as my brother's sons and grandsons are in the English army." — Besler recently attended a meeting at the Park Hotel in Plainfield, N.J., to start another Association for northern New Jersey Alumni. He says that 105 men were present, which augurs well for the beginning of a strong Association.

Ben Buttolph's memory for bishops is very good, for he remembers Bishop John W. Hamilton in 1884-1886 when your Secretary lived in his parish house at the corner of Berkeley Street and Columbus Avenue, now occupied by a filling station. — Frank H. Adams' new address is 4190 Ingraham Highway, Coconut Grove, Fla., formerly 1150 West Market Street, Akron, Ohio. — The home address of Herbert S. Bird is 541 East 26th Street, Brooklyn, N.Y. — We venture to say that no member of the Class enjoys Ned Webster's hospitality more than Ivar Sjostrom. He has never missed a Webster dinner, and we will wager that he intends never to do so. Complete details of the grand dinner and reunion at Ned's on June 2 will be given in the November issue of *The Review*. — BERTRAND R. T. COLLINS, *Secretary*, Chebeague Island, Maine.

1890

The mention in the May Review of the death of Schuyler Schieffelin brought from a thoughtful Alumnus the following information about him: After leaving the Institute he was given a position at Schieffelin and Company, wholesale drughouse; when it was incorporated, he became a vice-president. In 1898 he volunteered for service in the Spanish-American War and was commissioned lieutenant. He was asked by General Francis V. Greene to serve on his staff and was appointed signal officer, taking an active part in the capture of Manila. In the World War he again volunteered and was commissioned a captain and given command of a ground unit in the aviation service. He had one of the best stations in France. In 1907 he married Julia Cooper; their two children, Cooper and Mary Schuyler Schieffelin, survive.

Elizabeth E. Bickford died on April 1 in California. Born in Orford, N.H., she was graduated from Haverhill Academy before coming to Technology. Later she did postgraduate work at Johns Hopkins and obtained her doctorate at Freiburg University. She taught at Bryn Mawr Preparatory School, Vassar College, and for twenty-three years at Pasadena, Calif. Retiring several years ago, she lived at Hermosa Beach. The Secretary is indebted to Charlotte Bragg, with whom Dr. Bickford had maintained a continuous friendship since they entered Technology together, for the following notes: "She spent the first year abroad at Leipzig and in Freiburg. . . . Zoology and botany were the subjects in which she was always most interested, and I think all her teaching was under the head of biology. She spent one summer in Bermuda and several at Woods Hole, where at one time she worked with Loeb on hydroids. Always an eager student, she inherited a love for science. A new world was created for her at Tech by Professors Crosby '76, Niles, Sedgwick, and of course by General Walker. Money borrowed for Tech was repaid and borrowed again for the work abroad. Never losing her love for science, she more and more enjoyed literature and philosophy. Music always was a delight, and her last years were made happy by her California garden and lessons on the violin."

Henry H. Pope died on April 19. The records of the Secretary show that he was associated with sulphite paper manufacturing and the Great Northern Paper Company in Maine for nearly twenty years, after which he went to Wisconsin with the Tomahawk Pulp and Paper Company. Of recent years he had lived in Oak Park, Ill. — The Secretary has just received notice of the death, in 1937, of Charles O. Churchill at Springfield. After graduation he became associated with the Chapman Valve Company, first as draftsman and later as mechanical engineer for the plant. He was with this company for fifteen years, leaving them to associate himself with the Fairbanks Company in New York. While with this

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company he designed a line of valves and equipment for their new plant in Binghampton, N.Y. For more than twenty years he was representative for the Bethlehem Steel Company in western Massachusetts and Connecticut. Born in Abington in 1868, in 1894 he married Grace A. Fairbanks, who survives him.

Two members of the Class who had been lost from the rolls because of unknown addresses have now reported. They are William P. Flint, II, whose address is now Clifton Avenue, Toms River, N.J., and Bertram H. Davis, who is now living at 1623 South Main Street, Tulsa, Okla. — GEORGE A. PACKARD, *Secretary*, 50 Congress Street, Boston, Mass. HARRY M. GOODWIN, *Assistant Secretary*, Room 4-136, M.I.T., Cambridge, Mass.

1892

A. Marion Merrill, head of the English department at Somerville High School for twenty-eight years until her retirement in 1923, died on March 9 at her home, 19 Church Street, West Concord, Mass. Miss Merrill prepared at M.I.T. for her teaching career and taught in North Easton and Wakefield high schools before going to Somerville in 1895.

Arthur W. Dean, formerly of Taunton, Mass., now living in Winchester, for many years has been chief engineer of the Massachusetts Department of Public Works and later of the state planning board. Dean's retirement was the occasion for a party in his honor on March 28 in the Boston Chamber of Commerce Building. More than 200 persons, including public officials, engineers, and planners from seven states, were present. According to the *Taunton Gazette*, Dean recently has been appointed chairman of the Metropolitan Planning Division by Governor Saltonstall. Dean's public service career began more than forty years ago, when he organized and headed the New Hampshire State Highway Department. In 1910 he was selected as chief engineer of the division of highways, Massachusetts Highway Commission, and later, when the highway commission became part of the new Department of Public Works, he was appointed chief engineer of the entire department. He is past president of the Boston Society of Civil Engineers and of the American Road Builders Association, past director of the American Society of Civil Engineers, and a member of the American Association of State Highway Officials and of the Winchester planning board.

Carleton E. Davis wrote: "I am a would-be farmer, burdened with 160 acres of land carrying the name Hardscrabble Farm, which is entirely descriptive of why I have to continue actively in my vocation with the water supply company. I note there are still 152 names, on the mailing list of the Class and I wonder how many Davis' still persist. The fact that there were five of us of that name is indelibly impressed on my memory through an occurrence at a roll call by Arthur B. Frizell '88, of the Mathematics Department, in the first

year. Having called out 'Davis,' without an initial, there came a sequence of 'heres' from A. G., B. H., C. E., C. S., and F. I.' — Davis wrote under a letter-head which discloses that he persists as manager, Philadelphia Suburban Water Company, Bryn Mawr, Pa.

Billy Kales wrote: "... On February 13 I went to the Henry Ford Hospital for an operation, expecting to be well again in about three weeks. Unfortunately, complications set in which kept me on my back for seven weeks. Since then I have spent three and a half weeks at home, trying to recover my strength. It is only within the last three days that I have been able to spend even an hour at my office, but I am now so well that Mrs. Kales and I plan to leave for Tryon, N.C. The doctors think that the warm sunshine there should put me on my feet again."

On April 11, the members of the City Plan Commission of Detroit, in executive session, recorded the following testimonial: "WHEREAS, WILLIAM R. KALES, recently retired as City Plan Commissioner, after sixteen years of distinguished service to the City of Detroit, and, WHEREAS, the members of the City Plan Commission have unanimously voted to record a tribute of their high regard for his rare insight and judgment in the solution of Detroit's many challenging problems, together with their admiration of his unfaltering loyalty to Detroit, and his perennial faith in its mounting destiny, THEREFORE, be it hereby resolved that this testimonial be included in the permanent record of the proceedings of the City Plan Commission, and that a copy thereof be delivered personally to William R. Kales by the Secretary of the City Plan Commission, and that a copy of this Resolution be sent to the Mayor and Common Council, and that William R. Kales is hereby nominated honorable member of the Citizens' City Planning Advisory Committee of the City of Detroit." — JOHN W. HALL, *Secretary*, 8 Hillside Street, Roxbury, Mass. W. SPENCER HUTCHINSON, *Assistant Secretary*, 75 Federal Street, Boston, Mass.

1893

The 1940 "Register of Former Students" lists 219 living members of the Class as against 273 five years ago. This number, however, does not include eight men who are carried on Technology records as members of '94. The total number of members who have died is 177, according to the class records. Several are listed with "address unknown." The Class is no longer actively represented on the Technology Faculty. The death in September of Charles L. Norton, Professor of Industrial Physics, has already been reported. Three members are listed as emeritus: Ervin Kenison, Professor of Drawing and Descriptive Geometry, who retired in 1933; Stephen A. Breed, Associate Professor of Drawing and Descriptive Geometry, who retired in 1938; and Charles M. Spofford, Hayward Professor of Civil Engineering and formerly Head of that Department, who

retires this year. Spofford is listed in the Register as honorary lecturer in the Civil Engineering Department.

Frank S. Badger, who for the last few years has been living in retirement in the southeastern part of England, not far from London, must be experiencing keenly the thrills and terrors of the present European war. When last heard from, in March, he was still at his home address — Iona, Cobham Way, East Horsley (near Leatherhead) Surrey — where he has lived for many years. Badger's engineering career has taken him over the world, but for more than thirty years England has been his headquarters and his home. For about ten years following his graduation with the Class as a civil engineer, his professional work was confined to New England and New York. Then for a time he was an assistant engineer with the United States Reclamation Service on irrigation work in Nevada and Arizona, this period being followed by two years or more with Samuel Storrow '90 on hydroelectric work on the Pacific coast.

Badger's foreign work began in 1906 in Mexico, where for two years he was in charge of the building of waterworks and sewers for Monterrey. While in Mexico he served also as consulting engineer on hydroelectric projects. In 1909 he joined the staff of J. G. White and Company, the well-known engineering organization of world-wide scope, and was sent to the London branch, of which he later became chief engineer and executive head. During his earlier years at the London headquarters, his work took him to such faraway points as Argentina, Uruguay, Brazil, Colombia, Ecuador, Burma, Australia, and New Zealand. In the World War, as executive head of his company's staff of seventy in London, he was engaged in the inspection and shipment from England to France of 5,000 tons a week of construction and other materials for the American Expeditionary Forces.

Two other members of the Class living in war-torn Europe are Rigby Wason, whose home is at 57 Onslow Gardens, London, S.W. 7, England; and Toros Torossian, who now resides at Vidine, Bulgaria. — Wason, always the loyal Britisher, was one of the most popular members of the Class in undergraduate days. Immediately upon receiving his degree in Electrical Engineering, he returned home and was in government service, first in the general post office at London and later in charge of electrical work at Malta. After holding posts in private companies for a couple of years thereafter, he made a trip around the world in 1898-1899. He studied for the bar, to which he was called by the Honorable Society of the Middle Temple in 1902. In 1903 he became junior partner, and later sole owner, of Perry and Company, manufacturers of gas- and electric-light fittings and ornamental metal work, a company which was founded in 1756 and which held royal warrant of appointment from 1820. He retired from business some years ago.

For a good part of his life Wason has had a uniform to wear, beginning as a red-coated Rugby schoolboy. He served throughout the South African War with the cycle section of the City Imperial Volunteers, winning the medal with four clasps and also the territorial efficiency medal. He was a member of the Inns of Court Rifle Volunteer Corps. Wason was at Bayreuth for the Wagner festival when the World War broke out in July, 1914. He was put in the guardroom by the Germans and later interned at Marienbad. By the end of September, 1914, he was allowed to proceed home under parole. Thus barred from entering active service, he joined the special constabulary and engaged actively in canteen work. Remaining in the special constabulary after the close of that war, he rose to the position of chief inspector. Now that he is confronted, for the third time, by the horrors of warfare, Wason's friends in America are eager to get news of him.

Torossian, an Armenian, was born in Asia Minor in 1864. He was graduated from Robert College, Constantinople, Turkey, in 1887, coming to America to enter Technology. After receiving his degree in Civil Engineering in 1894, he returned to Lome, Bulgaria, which earlier had been his home, and for a time was engaged in the flour business. For some years he was municipal engineer of Lome, which is on the Danube. In 1914 he established himself in private practice as engineer and architect there. His work has several times taken him to Persia. From 1899 to 1906 he and his brother were engaged in construction work there for the Russian government. In 1934 he again returned to Persia for a few years, first doing railroad work and building construction, and then serving for a time as a consultant to His Imperial Majesty, the Shah, on the development of the province of Mazandaran, which is almost entirely the shah's property. It was in Persia that he was married in 1906. Bulgaria has been Torossian's home for the greater part of his life, however, and in January of this year he wrote of his change of address to Vidine in that country. His classmates earnestly hope that the present war will leave him unscathed.

George B. Glidden may well be called first citizen of Dighton, Mass. Like the famous Dighton Rock, he is a fixture in that ancient town on the Taunton River. Only the oldest inhabitants can tell how long he has served as first selectman and town moderator, but he was on the platform, as usual, as moderator at the town meeting this spring. And George is still going strong (so says the Secretary). — William F. Lamb, after graduation with the Class, followed his profession of electrical engineering only until 1898, when he became associated with his father in the wholesale lumber business in Boston. In this field he has been engaged ever since. A while ago he became a member of the wholesale lumber firm of Cunningham, Lamb and Prince, located at 16 Dorrance Street, Charlestown, Mass.

Charles Ladd Norton, Jr., '25, son of our late classmate, was married in February to Dr. Josephine Hopkins, daughter of Mr. and Mrs. Leonard S. Hopkins of 520 West 114th Street, New York City. Mrs. Norton was graduated from Smith College and the College of Physicians and Surgeons, Columbia University. Norton, Jr., like his father, is a physicist. He is now with Babcock and Wilcox in New York City. — Walter I. Swanton of the Bureau of Reclamation, Washington, D.C., has announced the marriage of his daughter, Dr. Lucy A. Swanton, to Sheldon deForrest Clark of Cleveland, Ohio. Walter's son, Walter F. '33, was a member of the wedding party at the ceremony in Orange, N.J., in May. Mrs. Clark took her medical degree at George Washington University, and subsequently was resident physician at the Flower Fifth Avenue Hospital in New York City.

Mrs. Alice Rust Cutler, widow of William Worcester Cutler, died on March 30, surviving her husband by only a few months. His death on October 25 was reported in *The Review* of last February. — Word has but recently been received of the death, on July 14, 1937, of Samuel F. Rosenheim of St. Louis, Mo., who was a special student in Architecture with the Class. Previously he had studied for two years at Washington University, and for a year at the Columbia School of Mines. For a few years after leaving Technology, he practiced architecture and in 1899, entered the glass business. Later he became proprietor of the Belle Hickey Manufacturing Company of St. Louis, specializing in store equipment. In 1908 he married Miss Harriet Ellbogen, and their family consisted of two daughters. Rosenheim retired from business several years prior to his death.

Ruel Crompton Tuttle, a distinguished water-color and portrait painter, died on March 10 at his winter home, Sarasota, Fla., at the age of seventy-three. Born in Windsor, Conn., son of a minister, he went to Trinity College, Hartford, where he received his bachelor's degree in 1889. After a year's association with the Art Students' League of New York, he came to Technology in the fall of 1890 and for two years studied architecture with the Class. Two years of art study in Paris followed. Returning to America in 1894, he was for ten years a water-colorist in Boston. He then moved his studio to Hartford, continuing his work there until 1922, when he shifted it to Greenfield, Mass. Although his studio was in Greenfield, he made his home at Windsor, his permanent residence until his death.

From 1895 he had served the Windsor Public Library Association — until 1920 as treasurer and thereafter as vice-president. Music and history as well as painting held his attention, and he lectured on the history of fine arts at Amherst College in 1929 and 1930. Some years ago, the Drama League awarded him a prize for the play "Young Leonardo." Tuttle never married. His club affiliations were many: He was a member of the Art Students' League of New York, the Connecticut Academy of Fine

Arts, New York Water Color Club, Washington, D.C., Water Color Club, Wadsworth Athenaeum of Hartford, Connecticut Historical Society, the University and Appalachian Mountain clubs of Boston, the University and Musical clubs of Hartford, the Psi Upsilon Fraternity, and the alumni associations of Trinity College and the M.I.T.

Amasa Walker, IX, whose life was spent in the publishing field, died on December 26. For many years he had made his home at 33 Washington Square West, New York City. Following his course at M.I.T., he took a year's work in English at Harvard to fit himself for newspaper work. From Harvard he joined the staff of the Springfield *Union* as its correspondent in Pittsfield, Mass., but after six months he entered the employ of the publishing house of Harper and Brothers, New York, in their educational department. Three years later he was sent to Boston to open a New England agency for that house. After the failure of Harper's in 1900 he remained in Boston for a few years, first with D. C. Heath and Company and later taking charge of the New England agency of D. Appleton-Century Company, Inc., which he opened. Thereafter he was general manager of the educational department of Longmans, Green and Company in New York. As a side issue he became much interested in scientific management and once wrote: "My training in Course IX prepared me to appreciate the application of science to commerce. Hitherto my work has been concerned chiefly with production. In my spare moments, I am engaged in demonstrating that science can be applied to distribution." Walker was a member of the Society for the Promotion of Engineering Education, Chi Phi Fraternity, Masonic Fraternity, Sons of the American Revolution, Society of American Wars of the United States, Quill Club, and City Club of New York. In 1898 he married Miss Anne B. Babcock and they had one son, Philip Walker.

The following changes of address have been received: Orren Allen, 513 First National Bank Building, Post Office Box 1505, Denver, Colo.; Professor Arthur G. Farwell, 2 East 12th Street, New York, N.Y.; Henry W. Gore, The Myles Standish, 30 Bay State Road, Boston, Mass.; George Guppy, Federal Works Agency, Public Buildings Administration, Washington, D.C.; Professor Ervin Kenison, 291 Mount Auburn Street, Watertown, Mass.; Louis Levi, Hotel Traymore, Atlantic City, N.J.; Professor Emil Lorch, 1023 Forest Avenue, Ann Arbor, Mich.; Frederic W. Lord, Lord Electric Company, Inc., 10 Rockefeller Plaza, New York, N.Y.; James H. Reed, 160 East 48th Street, New York, N.Y. — FREDERIC H. FAY, *Secretary*, 11 Beacon Street, Boston, Mass. GEORGE B. GLIDEN, *Assistant Secretary*, 551 Tremont Street, Boston, Mass.

1895

The activity of the General Motors Corporation at the New York World's Fair for the 1940 season was launched on

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May 6 at a dinner given by Alfred P. Sloan, Jr., chairman of the board, to 400 students, college presidents, and faculty members in the General Motors exhibit building. The theme of the dinner discussion was "The Opportunity for Youth in Building the World of Tomorrow." Mr. Sloan's object was to discuss with the youth themselves the problems which face them in finding their places in industry. The students came to New York especially to be his dinner guests. They toured the Fair's grounds and the General Motors exhibit in the afternoon and rode on the Futurama, which has been completely refurnished and which includes many new features, among them 16,000 miniature cars traveling along the highway of 1960, a university town of tomorrow, and an industrial community lighted by diminutive "grain-of-wheat" lamps.

William S. Knudsen, President of General Motors; Karl T. Compton, President of M.I.T.; Ernest M. Hopkins, President of Dartmouth College; General Hugh S. Johnson; and Charles F. Kettering, Vice-President of General Motors, were present to support Mr. Sloan's views and to answer some of the many questions which he had asked the students to submit. To the question "Has industry reached the peak of its expansion?" Mr. Kettering replied, "No — it is just in the beginning." Dr. Compton disputed the theory that continued technological improvement would throw more and more men out of work; as he pointed out, every new thing developed creates more jobs.

Mr. Sloan said: "I can say to you without reservation and with greatest conviction that the possibilities of the years to come — your opportunities — are just what you make them. Potentially they are beyond the imagination of any of you. The sole question is how intelligently are we to manage our affairs." In sponsoring this youth and industry forum, General Motors launched what was described as the first attempt by any large business group to focus serious consideration upon the much discussed youth problem. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass. JOHN H. GARDINER, *Assistant Secretary*, Graybar Electric Company, 420 Lexington Avenue, New York, N.Y.

1896

Con Young and Abby are back at their Cape Cod home for the summer. They returned from Fort Myers by the central route through Alabama this year and visited friends on the way. Con apparently kept himself occupied during the winter, and both he and Abby participated rather extensively in social affairs, with the result that Con did not get out his fishing tackle until late in the season. The Florida fishing season was actually very late, probably on account of the cold weather.

The Secretary recently gave expert testimony at a court trial in Concord, N.H., and it was a pleasure to meet there Walter Pennell, who was acting as expert

adviser and witness for the other side. Walter is enjoying life in his old home town of Exeter, N.H., where he went after retiring from the Telephone Company in St. Louis four years ago. He has a fine residence with splendid surroundings which serve to keep his mind and muscle engaged. He takes a prominent part in the civic life of the community and is active in various organizations. Last year he was representative to the New Hampshire Legislature, and he is director of the Exeter *News-Letter*, the New Hampshire Seacoast Regional Association, and the New England Council; vice-president of the Exeter Hospital Corporation; and a member of the Exeter Historical Society, Lions Club, and Country Club. Having raised one family, Walter has now started a second family, and unless some other classmate comes forward later with evidence of a better record, it now looks as if Walter would have the honor of possessing the last class baby, in the person of Elizabeth Kimball Pennell, born March 18. Another girl by his second wife was Martha Moulton Pennell, born September 20, 1937.

Jacobs sent post cards from various places while he and Mrs. Jacobs were traveling. In April they had covered Boulder Dam and Zion and Bryce canyons in Utah and were headed east. A later letter told about the acquisition of a grand collection of photographs and geological specimens. Their experience in Florida was very chilly. They had to put antifreeze in their automobile in Mobile, Ala., and it snowed for them in Mexico City — the first snow in thirty-three years. They also struck snow in Bryce Canyon, but they had fine weather in the Grand Canyon and around Santa Fe. At the time of their last letter they were getting to the point where a respite from traveling looked good to them and were looking forward to moving on to Detroit, where Jacobs would dispose of his Zephyr and purchase a new Mercury, driving the new car home to Burlington, Vt., where they expected to arrive early in June.

Rockwell had a letter from Jim Mellish in New York City, saying that Jim had decided to save his energy and funds to be with us for our grand celebration of the forty-fifth anniversary next year in Osterville and would not plan to appear here on Alumni Day this year. — James Fuller, the son of Bob Fuller of Worcester, was recently awarded one of the three 1940 Worcester Woman's Club scholarships. This is the third year that he has shared in this academic scholarship. He is a sophomore at Syracuse University and is on the honor roll. He was recently elected art editor of "Onondagan," a college publication.

Last month mention was made of the death of Fred Fuller, VI. He was a live wire and a member of Phi Beta Epsilon, Phi Kappa, and various other student organizations. He was born on January 29, 1872, in Springfield, Mass., the son of William A. and Harriet Eliza Fuller. He attended Springfield schools and River-

view Academy, Poughkeepsie, N.Y. He married Elizabeth S. Leonard, on May 29, 1913, and there were two children, Frederic William, Jr., born March 11, 1918, and Elizabeth, born November 11, 1915. Since 1898 he had been general agent of the Equitable Life Assurance Association, first under the firm name of Fuller and Trask and after 1903 under the name of F. W. Fuller. He was a director of the Third National Bank and Trust Company of Springfield, member of the Boston and New York Life Underwriters associations, the Western Massachusetts Underwriters Association, the University, Exchange, and Engineers clubs of Boston, the Union League, Bankers, and Technology clubs of New York, and the Nayasset, Colony, and Winthrop clubs of Springfield. As long as his health permitted, he was active in tennis, golf, and horseback riding. According to the *Eastern Underwriter* he was the country's leading insurance agent. We all recall Fred's personality and activities at class gatherings and at our five-year reunions, to which he came while his health allowed. He retired from active business in 1930 because of failing health, and his condition gradually declined until he finally became almost incapacitated. Pneumonia was the immediate cause of his death, which occurred on April 19. Fred was a very loyal fellow in everything he did. His success in the insurance business caused the Equitable company to urge him many times to transfer his activities to New York, but he preferred to remain loyal to his old office in Springfield.

The sad news has been received from Mrs. Northup of the death of her husband, Edwin S., on March 31. He underwent a serious abdominal operation, pneumonia developed, and he died suddenly. He was with our Class for two years, from 1892 to 1894, in Electrical Engineering, and as a student was a member of the Technology orchestra and the freshman football team. He was born on September 7, 1873, in South Kingston, R.I., the son of William H. and Hortense Saunders Northup. He was married in February, 1912, in Brooklyn, N.Y., to Louise E. Schmitt, and the children were Eugene S., born August 10, 1914; William H., April 1, 1920; and Aldrich H., April 13, 1926. From 1901 to 1904 he was with the General Electric Company in West Lynn, Mass. The next year he was at the Brooklyn Navy Yard. From 1907 to 1911 he was located in New York City, and from 1912 to 1923 was with the New York State Department of Architecture in Albany. Since 1923 he was in the real estate business in Pensacola, Fla. He belonged to the Masonic Fraternity and his hobbies were music and radio. He was a man who maintained a lively interest in the Class and in Technology, but while he was actively employed, he did not seem to find the time to participate in class gatherings. When he became semiretired, he took advantage of the opportunity to be with us, and we welcomed him at the 1936 reunion in Osterville, although he

was almost prevented from attending by an attack of illness just previous. He was delighted to be with us again and promised that he would not miss another five-year reunion as long as he was able to come. He had been looking forward to 1941 and our forty-fifth.

It is only now that we learn that Northup was an outstanding figure in the field of music. He modestly never told us anything about it himself. His love for music dated back to his early boyhood, and on June 18, 1886, he played his violin in Professor Maximilian Weinstein's grand orchestra at the old Opera House for the benefit of St. Michael's Church in Pensacola. When he returned to Pensacola from Albany to carry on the business left by his father, he became a moving spirit in the advancement of music in that city. He was director of the choir at Christ Episcopal Church and of the Pensacola Choral Society. For five consecutive years he directed the presentations of the Messiah at Christ Church at Christmas and the Crucifixion during the Lenten season. It was at his home that a group of orchestral players began assembling fifteen years ago, a step which was the start of the Pensacola Civic Orchestra. Last February this orchestra, numbering forty members, dedicated its concert at the high school auditorium to its founder, Northup, who had retired as conductor two years ago. He was keenly interested in young people's bands, being generous in both personal and financial support of local music movements. His musical library was one of the best. His youngest son, Aldrich, is now a high-school sophomore and wants to come to M.I.T.

Albert W. Thompson passed away on May 18 at his home in Lowell, Mass. Bert had known for a year or two that his heart condition would not allow strenuous efforts, but he was carrying on and attending to his business as usual when he suffered a cerebral hemorrhage and survived only a few days. He was graduated in Mechanical Engineering and as a student was a member of Delta Tau Delta Fraternity. He was born on February 16, 1874, in Boston, the son of Henry M. and Ellen Straw Thompson. On October 6, 1898, he married Hildredth Nesmith, who died on December 23, 1928. He married again on June 30, 1930, his second wife being Helen Burlingame Webster. One son, Nesmith Thompson, was born on December 23, 1899. Bert attended St. Paul's Preparatory School at Concord, N.H., before coming to M.I.T. After graduation he was with the Amoskeag Manufacturing Company in Manchester for fifteen years — as assistant engineer for two years and then as mechanical superintendent. In 1912 he became superintendent of the Lowell Machine Shop (afterward named Saco-Lowell Shops). In 1914 he went with the G. M. Parks Company of Fitchburg and in 1917 became executive vice-president of the Parks-Cramer Company of Fitchburg and Boston, which position he held to the time of his death, carrying on his office in Boston and living in Lowell.

1896 Continued

During the World War, as vice-president of his company, he furnished fabricated pipe products to the emergency corporation, air-conditioning equipment to textile mills manufacturing army supplies, and special engineering equipment to the Edgewood Arsenal. He was the holder of several patents on humidifiers. He belonged to the American Society of Mechanical Engineers, the National Association of Cotton Manufacturers, the Yorick and Vesper Country clubs of Lowell, and the University, Union, and Exchange clubs of Boston. He was the author of occasional contributions to engineering magazines and professional societies. He was an ardent golfer and also did considerable fishing and hunting. He was elected president of the Merrimack River Association in 1912, and a member of the Technology Alumni Council, representing the Technology Club of the Merrimack Valley, in 1925. Bert was one of our old stand-bys who could be counted upon to come to our gatherings regularly. His smiling face and genial presence will be sadly missed. — CHARLES E. LOCKE, *Secretary*, Room 8-219, M.I.T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

1898

Recently, Roger Babson asked for the addresses of all '98 men. These we sent him, and here is his explanation of why he wanted them: "I wish to thank you for the list of '98 living graduates. I wanted the list in order to write them a letter as to why I have accepted the leadership of the *New Prohibition* party. It is evident that both legislation and invention have outstripped the needed support of *character*. As a result, things are so out of balance that the nation can get out of its present mess only by parents, schools, churches, and political parties teaching the old-fashioned virtues of integrity, hard work, self-control, and common sense.

"I shall have nothing to offer the American people except the privilege of sacrificing themselves for the common good; but this applies both to employers and wage workers — to playboys as well as to those on relief. Neither of the big parties has the courage to tell this truth to the people. Hence I am going forth, 'crying in the wilderness,' as did the founders of the Republican party nearly 100 years ago.

"Next to the importance of developing the nation physically, mentally, and spiritually by prohibiting the liquor traffic, commercialized gambling, and other evils, we do ask for an opportunity to work hard at what we wish, for the pay which we can get. This may require the regulation of labor unions, as well as of banks, utilities, and big business; but if so, then okay. We are a small group and have little money. I, however, believe there are millions of members of the two big parties who would be glad to hear for what we stand. Any help you can give to let people know these principles will be appreciated." — We are

sure that Roger will put vitality into the Prohibition party. If all those who believe in its principles could be made to believe that a vote for the party would not be a vote wasted, Roger would be elected president, and the United States would become a better country.

David J. Myers' present address is: Apartment 5, 1978 Vallejo Street, San Francisco, Calif. Previously he lived for many years in Seattle. — Ben Hinckley, who studied for two years with '98 but was graduated with '99, died on May 6 at his home in Newton, Mass. He was born in Woburn, Mass. After graduation from Technology he worked for the Northern Pacific Railroad, the New York, New Haven, and Hartford Railroad, and then became purchasing agent for the Boston and Maine Railroad. Since about 1920 he had been a wholesale coal dealer. For eight years he served as alderman in Newton. — ARTHUR A. BLANCHARD, *Secretary*, Room 4-160, M.I.T., Cambridge, Mass.

1899

I have received a note from the editor of *Phi Beta Epsilon News*, telling me that an error appeared in my notes of June, 1939. It appears that the report I received of the death of William E. West of Toronto, Canada, was an error. This is a correction I am only too happy to make. — From Lew Emery at Atlantic City, N.J., comes the good news that his health is very much improved and that he is growing stronger. — Frederick Waddell has planned a trip to Canada this year to visit a ninety-five-year-old uncle. This trip will take him through the Maritime Provinces and around the Gaspé Peninsula. He will pass through Bath, Maine, and take a look at the Bath Iron Works and probably see W. S. Newell. Waddell announced that his third grandchild was born on March 31.

Through T. C. O'Hearn, city electrician of Cambridge, Mass., I learned with regret that Clarence A. Moore has resigned from the board of assessors of Arlington, Mass., because of ill-health. O'Hearn, too, had not been well, but had improved when he wrote. — E. A. Packard was on a brief visit to Washington recently and called me on the telephone, but I was out of town. — Eugenia B. Frothingham is now living at 297 Marlborough Street, Boston, Mass. — Arthur L. Hamilton spent a day in Washington a while ago and is now at Sugar Hill, N.H. — It is with profound regret that I announce the death, on May 6, of Ben Hinckley at his home in Newton, Mass. — W. MALCOLM CORSE, *Secretary*, 1901 Wyoming Avenue, N.W., Washington, D.C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

1900

Return of a letter from Rome Trust Company, Rome, N.Y., notifies us of the death on June 18 last year of Barton Haselton, II, formerly chairman of the board of Revere Copper & Brass, Inc., at Rome, N.Y. — Frank E. Burnham, X, has moved to Charlotte, N.C.

Brock sends the following: "... I am no longer located at Weston College in Weston, Mass. I had been a member of the faculty for a number of years, teaching physics and also for a time mathematics and astronomy. Last summer I was appointed rector at St. Robert's Hall, which is located in Pomfret Centre, a small town in the northeastern corner of Connecticut. You doubtless know where it is, as it was quite a popular summer residence when we were young. The white, or ghost, train to New York from Boston used to pass through here in the Nineties. Our nearest town of any size is Putnam."

Gibbs writes: "... I remember a great many of you and would surely have called you by name if I could have been at the reunion. ... However, my position here [Novice Society of St. John the Evangelist, 980 Memorial Drive, Cambridge] as a member of a religious community, and especially as a novitiate, prevented any thought of attendance; then of course poverty is one of the rules of our life and hence I didn't have the fare to get to you and back. My life has varied a lot. For about seven years I followed various departments of civil engineering. Then I felt the vocation for the priesthood in this church and started three years at the Episcopal Theological School. I received a degree of bachelor of divinity and was later ordained deacon and still later, priest.

"My first work was as a missionary in Oklahoma. I was there seven years. That was a period of great development in petroleum oil, and I saw many wells shot. The gushers looked like liquid gold to the spectator. After a short time in New York City as assistant in a parish, I went to Paris for the Institute. You can recall all that in *Technology's War Record*, under the title, 'Paris Bureau.' I really did my best for my alma mater, giving nearly all my time to the service of our graduates and former students who were enlisted under the American Expeditionary Forces. I did of course attend to my religious duties, such as saying mass each Sunday at the American Church of the Holy Trinity and also at St. George's English Parish. I came home in 1919 and was at various stations. For some time I was a governor of the old Technology Club in Gramercy Park. From 1923 to 1926 I was an assistant at Trinity Church, Boston, under Bishop Sherrill, who was then rector. While at Trinity I studied at the Harvard Graduate School on time allowed by the rector and finally attained an M.A. in 1925. In 1926 I went to France again, as assistant at Holy Trinity Church (called a Pro-Cathedral), where I was usually known as Canon Gibbs. I assure you I treasure my life and education at M.I.T. and am only sorry I cannot keep up many contacts with former friends. Since 1918-1919 I have had to reserve my time and energy for my own vocation. ... Letters can be sent to me, and anyone may inquire for me by telephone or by calling; usually I am able to give a few minutes to a caller." — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston, Mass.

1901

Since preparing the class notes for the May Review, your Secretary has received from Frank S. MacGregor '07 of Wilmington, Del., considerable additional information about Alexander J. Taylor, who died on February 27. Ralph Whitman of our own Class, who is now commandant of the Third Naval District, with headquarters at 90 Church Street, New York City, has also sent some further information regarding our old friend Alex.

"Taylor was sixty-five years of age when he died, was a native of Dover, Del., and was one of the early graduates of Delaware College. In fact, he was the youngest in his class (1889) to receive a degree. His first job after graduation was with the Wilmington Park Department at \$3.00 a week. Later he was with the street and sewer departments as assistant engineer, and at the outbreak of the Spanish-American War he joined the Delaware Volunteers and became captain of Company M. After the war Taylor attended M.I.T. and was graduated with our Class in the Course in Sanitary Engineering. After graduation he had mining engineering experience in Alaska but soon returned to Wilmington and, after being connected with the engineering divisions of that city, he became associated with the Du Pont Company. His engineering and executive ability allowed prompt advancement, and Pierre du Pont '90 in due course recommended Taylor as the man to carry out a gigantic and important school-building program for Delaware. Later, Taylor became vice-president and chief engineer of the Delaware School Auxiliary, and in 1929 he became president thereof, continuing as chief engineer although the major work of the foundation was completed. Although Taylor neither drank nor smoked, he was selected as Delaware's first liquor commissioner after the repeal of prohibition. Although he found himself in an almost new world, he quickly adapted himself and became liked and admired by the liquor dealers for his fairness and intelligent grasp of their problems. Among other responsibilities capably administered by Taylor, he did much for his first alma mater, the University of Delaware, becoming a trustee of the university, which post he held until his death. In fact the college gymnasium was named after Taylor." Your Secretary can also vouch for Taylor's loyal allegiance to 1901 and his liberal contributions to the financial needs of our Class.

Another classmate who has been generous in corresponding with the Class Secretaries has been Nat Patch of Buffalo. Nat was recently honored by the American Foundryman's Association with a gold medal for distinguished service and contributions to the foundry industry. Such an award is an honor which any man would value. In Nat's case it was a recognition of splendid accomplishment in his chosen business, because he had been handicapped by poor eyesight for

so many years. In fact, when Nat was at Tech he had only one good eye and the other did not function too satisfactorily. Although in 1923 he had to retire as works manager of the Lumen Bearing Company of Buffalo because of poor eyesight, he has since continued as secretary and advertising manager of that company.

Your Secretary has also heard from Ed Robbins, who now makes his home at 51 Wellington Street, Springfield, Mass. Although he had to retire from business some years ago because of a very serious physical mishap, Ed is now in reasonably good health and would like very much to see any of the fellows who happen to be passing through Springfield. He also stated that he greatly appreciated receiving letters from his old friends and made particular mention of his great delight in recently receiving a letter from a friend who for nearly thirty-five years has been a missionary in China.

Ted Lange, also of Springfield, is a right good correspondent and has recently sent us the notice of the last meeting of the Technology Club of the Connecticut Valley. From what Ted states and from a newspaper clipping which he enclosed, the Association is making wonderful progress, the membership now being about 350 and the average attendance at meetings during the past winter having been eighty-five. Ted stated that at the next meeting, to be held in October, President Compton will be the guest speaker. Consequently any of the boys who are in Springfield early in October should get in touch with Ted and arrange to attend that meeting.

We have heard recently from Fred Clapp, who stated that his peregrinations and activities during the past winter have been limited to Texas and Oklahoma. Thus Fred is now staying comparatively close to headquarters at 50 Church Street, New York, his former travels for the oil business usually having taken him as far as Iraq or other countries in the Far East. — Two of the other men heard from since the first of the year were Casani, I, and Sturtevant, VI. Neither made any special comments. Casani noted he was still with the American Bridge Company, Frick Building, Pittsburgh; Sturtevant gave his address as 55 High Street, Pawtucket, R.I.

Members of the Class may have been wondering what had happened to the "Class Register," reference to which was made in the annual class letter sent out last fall. Several things have interfered with the preparation of that brochure, the principal delay being the fact that your Secretary had not (as these notes were being prepared on May 17) received the new M.I.T. Register which we have all been expecting. Possibly, therefore, sometime before next fall it may prove feasible to find the time to prepare the class register. However, do not expect it until you see it. — ROGER W. WIGHT, Secretary, The Travelers Fire Insurance Company, Chapman Building, Portland, Maine. WILLARD W. DOW, C.P.A., Assistant Secretary, 20 Beacon Street, Boston, Mass.

1902

Robbie has migrated north again to Fairfield, Conn. Beulah Hill has again taken up her residence at 130 North Mason Avenue, Chicago. Viator, who has long been engaged in newspaper work in Oregon, is reported to be back in Boston at Trinity Court. Robert Straub has returned to Pittsburgh, where he can be found at 2026 Oliver Building. — Word has been received of the death of Pierre B. Pendill, VI, at his home in Oakland, Calif., on November 15. — Your Secretary would like to get copies of the *Retort* to fill out the files; any classmate having extras, please let him know. — Bert Sherman adds two grandchildren to our growing list: a granddaughter, Mary Ellen Earl, born on April 26 at St. Paul, Minn., and Thomas White Sherman, born on May 10 at Squantum, Mass. — BURTON G. PHILBRICK, Secretary, 246 Stuart Street, Boston, Mass.

1906

Annette Philbrick, daughter of H. R. Philbrick, VI, was married at the Asylum Hill Congregational Church, Hartford, Conn., to David Nunes Carvalho, 2d. — Ann Ramsey Darling, daughter of H. E. Darling, III, was married on Saturday, June 8, to Donald Church Gutleben at St. Andrew's Church, Wellesley, Mass. — The Boston papers recently announced the arrival of Warren Allan Prescott, who was born on April 20. Mrs. Prescott is the daughter of C. L. Kasson, VI, who is now eligible to join the other classmates holding grandparent honors. This item was confirmed by a telephone call to Charlie, who is enjoying life on his farm at Plaistow, N.H. He is very busy with his agricultural duties, including experiments in soil conservation, and is doing some writing on the side. His son, C. L., Jr., who was graduated from Northeastern University several years ago, is now with the Standard Oil Company at the largest oil refinery in the world, at Aruba, Netherlands West Indies.

The writer recently met his fellow townsman, Perley K. Griffin, II, who is now with the Bethlehem Shipbuilding Company at their plant in Quincy, Mass. — Don't forget the Thirty-Fifth Reunion at the Oyster Harbors Club around June 1, 1941. — JAMES W. KIDDER, Secretary, Room 802, 50 Oliver Street, Boston, Mass. EDWARD B. ROWE, Assistant Secretary, 11 Cushing Road, Wellesley Hills, Mass.

1907

Commenting on the first organization meeting of the newly elected board of directors of the Cities Service Company, held on May 16, the *New York Times* stated that W. Alton Jones, President, had announced that John M. McMillin, connected with the company since 1908 and "for many years an executive of the company in charge of securities issues, and widely known in investment banking circles," was elected a vice-president and a member of the executive committee. John's business address is 60 Wall Street,

1907 Continued

New York City, and his home is at 3 Fairway Close, Forest Hills, N.Y. — Hud Hastings thoughtfully sent me an announcement of the marriage of his oldest son, Hudson, Jr., to Miss Florence A. Nyitray of Milford, Conn., on May 11.

In the April, 1939, Review, we published a very interesting letter from Birendra C. Gupta, whose address is Post Office Burnpur, via Asansol, East Indian Railway, India, and whose occupation is chief town administrator of the Indian Iron and Steel Company Ltd., the Steel Corporation of Bengal, and the Indian Standard Wagon Company, employing a labor force of some 18,000 to 20,000 persons. I have received from Gupta another letter, dated in India on March 14, much of which is reproduced:

"... Anyway, that published letter brought a number of responses from the good old lads with whom I used to muck around in the dear old days of Tech. It seems curious to me that I should have been in the teaching line for more than twenty-six years, wielding the autocratic rod over so many generations of unfortunate students. Ralph Crosby seems to have qualified himself for Uncle Sam's bounty by producing a large and distinguished family. I wonder if he is still up to his old pranks. He always reminded me of a particularly destructive and mischievous type of monkey we have in this country. I so remember the occasion when he glanced round the electrical lab and thought that no one was looking. Before I could stop him, he had jammed in one of the main switches. I expected to see the lab blow up, but Providence was on his side and nothing happened. Professor Clifford '86 had seen him from round the corner and promptly took him to task, but in such a nice and gentle manner, as was the way with old Harry, that Ralph desisted from his antics for the rest of the term. I have also heard from Hugh Pastoriza, and his was a fine letter.

"Since leaving the educational service of the government of Bengal, I have now been for twenty months with the Indian Iron and Steel Company. . . . We have just produced steel for the first time, and Calcutta, Bombay, and London share markets have been buzzing up and down — mostly up. In addition to the other departments under me, I am to organize the air-raid precautions. Frankly, I know nothing about air-raid precautions, but in India one has to be a jack-of-all-trades. Since I came here, I have learned all about milking cows, producing dough for bread, passing judgment on quality of meat, building septic tanks, looking after the policing of the town, regulating food and commodity prices, bringing pups into the world, organizing first aid, and designing baby clinics. This is a grand life with such a variety in it. I have become an enthusiastic Rotarian and am the chairman of the program committee of the Asansol Rotary Club; ran a successful banquet and dance a few weeks ago. I am rather happy that everyone came and told me that it was the best show that the Asansol Club had had for years. I was also

delighted with my tennis last evening, when I beat a number of good young players very easily. I have been forced to accept the position of honorary secretary of the company's Officers Club. . . ."

— BRYANT NICHOLS, *Secretary*, 126 Charles Street, Auburndale, Mass. HAROLD S. WILSON, *Assistant Secretary*, Commonwealth Shoe and Leather Company, Whitman, Mass.

1908

Harry S. Chandler has been appointed acting general manager of the cellulose products group of Canadian Industries, Ltd., with headquarters in Montreal. This group includes the paint and varnish, Fabrikoid, and Cellophane and plastics divisions. — Maurice Denny, chairman of William Denny and Brothers, Ltd., Dumbarton, Scotland, has been elected president of the Shipbuilding Conference, the head offices of which are in London. — Ralph E. Manning was elected president and treasurer of the Philadelphia Manufacturers Mutual Fire Insurance Company on May 1.

In connection with the death of Carl W. Keniston, which occurred on May 14, 1939, we quote the following letter received by Cookie from Clarence W. Clark: "Carl's death was very sudden. He had been working around Holderness on various surveying jobs and had taken over a new tract of land on the north side of Squam Lake, developing it for summer camps. In fact, he had built two four-room cottages and was getting ready to start four more. Death came from a heart attack in the night, and he died before a doctor could reach him. News of his death came to me from his first wife from Madison, Wis., so it arrived too late for me to attend the funeral."

On Wednesday, May 22, we had an informal dinner in the faculty dining room at Walker Memorial. The following were present: Sam Gardner, Harold Gurney, Steve Lyons, George Belcher, Lang Coffin, Henry Sewell, George Freethy, Frank Towle, Sam Hatch, Winch Heath, Myron Davis, Joe Wattles, Cookie, Ted Joy, and Nick Carter. Sewell told us that he had recently been in Rome, Ga., where he had a chance to visit with Carl Bangs, who is chief engineer of the Tubize Chatillon Corporation. Cook reported for Linc Mayo, who was out of town, that the Class was still solvent, having something over \$100 on deposit in its savings account. It was decided that beginning next fall we shall again have our bi-monthly dinners, the first of which will come November 12, those following, on the second Tuesdays in January, March, and May.

The National Association of Manufacturers recently honored two of our classmates, Willard F. Rockwell, President of the Timken-Detroit Axle Co., and William C. Taylor, director of glass technology at the Corning Glass Works, with silver plaques, symbols of America's appreciation of new jobs, new goods, new services, and improvements in the standards of living brought about by these Modern Pioneers.

THE TECHNOLOGY REVIEW

Mail has been returned from Charles W. Bailey, formerly of 313 Newton Street, Waltham, Mass., and Ralph E. Beck, 127 Cornell Street, Newton Lower Falls, Mass. We would appreciate learning their whereabouts. — We report with regret the death of Elliott S. Church on January 3. — We have received the following changes of address: Clifford H. Boylston, Route 4, Box 58A, Birmingham, Ala.; William R. Heilman, 5167 North Capitol Avenue, Indianapolis, Ind.; John Mather, Ordnance Department, Watertown Arsenal, Watertown, Mass.; Harold E. McPhee, Church Street, West Acton, Mass.; C. Hamilton Preston, 120 East 19th Street, New York, N.Y.; George W. Scott, 6 Brookland Drive, Bronxville, N.Y.; Irvine S. Taylor, Roy, N.M. — H. LESTON CARTER, *Secretary*, 60 Battery March Street, Boston, Mass.

1909

George Wallis has written me that Ed Ryerson was recently elected chairman of the board of directors of the Inland Steel Company. Ed has been vice-chairman of Inland since its acquisition of Joseph T. Ryerson and Son, Inc., in 1935. He has been associated since 1909 with the Ryerson company, founded by his grandfather in 1842. — There came to my desk a few days ago the annual report of the Utah Power and Light Company, of which George M. Gadsby is the president and general manager. George is located in Salt Lake City.

Brad Dewey, President of Dewey and Almy Chemical Company of Cambridge, Mass., was one of the board of research experts in a panel discussion, à la "Information Please," which was part of the 1940 Boston Research Day luncheon put on by the New England Council, the Associated Industries of Massachusetts, the Boston Chamber of Commerce, the M.I.T., and the Engineering Societies of New England. — Announcement was made recently of the engagement of Bradley Dewey, Jr., to Miss Jane Holcombe, daughter of Professor and Mrs. Arthur N. Holcombe of Cambridge, Mass. Brad, Jr., prepared for college at Milton Academy and was graduated from Harvard in 1937. He is studying for an Sc. D. degree at M.I.T. Miss Holcombe made her debut in the 1936-1937 season and is a member of the Junior League.

The following letter came from Delos Haynes of Haynes, Koenig and Wolf, patent attorneys of St. Louis. Delos, who spends his spare time traveling in unusual places, wrote: "After several trips to then peaceful Europe and countries beyond, Mrs. Haynes and I recently found an equally charming spot in our own United States, the Rio Grande Valley in New Mexico. We found Americans of Spanish ancestry, of Indian ancestry, and a minority of 'Anglos,' as they call us from the East, all living peacefully in a rugged country of magnificent colors and fantastic contours. The Spaniards speak Spanish and some English. The Indians speak their own tribal tongue in addition to Spanish and English. We visitors struggled along with mere English.

"Just four hundred years ago the first Spaniards came to this valley — soon after Columbus and Cortez, and long before the Pilgrims or Puritans landed in Massachusetts or the gentlemen adventurers settled in Virginia. For most of the Seventeenth Century the only regular contact between Santa Fe and the outside world was a caravan that plodded from Mexico City once every three years! Many of the medieval sacred pictures and statues from churches in Spain were carried by this triennial train of long ago and adorn the adobe churches of the valley to this day. Our own government has finally co-operated with the Indians to preserve tribal tongues and customs, and now encourages them to live in their own way.

"Scientists at Santa Fe were most courteous in explaining the fascinating facts and legends of the present and past. . . . We climbed over cliff-dwellers' caves. We learned much from friendly Indians with their keen sense of humor. We watched the incantatory all-night Blessing of New Houses in far-off Zúñi, the site of the Seven Cities of Cibola, where Sixteenth Century Spanish conquistadores ruthlessly searched for non-existent houses of gold. We saw there the sacred doll at whose immaculate birth the people and even the animals came from far and near to worship. All in all, facts blended with legend into such a chimerical pattern that we were surprised to see the Stars and Stripes floating over the village post offices."

George A. Morrison, who has been in Lucky Shot, Alaska, is now associated with the Pittsburgh Plate Glass Company, Columbia chemical division, Barberton, Ohio. — It is with regret that we announce the death, on April 23, of Clifton G. Gilpatrick, of Needham, Mass. He was a special student in Architecture during our fourth year. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. *Assistant Secretaries*: PAUL M. WISWALL, MAURICE R. SCHARFF, New York; GEORGE E. WALLIS, Chicago.

1910

Your Secretary announces with deep regret the death of Philip D. Terry. He had been ill with pneumonia and migratory phlebitis since the early part of the year, and passed away in May. He was a successful orchardist in Orondo, Wash. He leaves his widow.

A picture published in the Washington Sunday *Star* showed four generations of Kenneth P. Armstrong's family: William Elliot (Ken's father-in-law), Mrs. Armstrong, William E. Armstrong (son), and William H. Armstrong (grandson). — Louis O. French has joined the exalted rank of grandfathers. — Herbert G. Reynolds is transferred to Syracuse, N.Y.

It has been many years since the Class has heard from Douglas McMurtrie, but recently his name appeared in the Boston *Traveler* and the *Christian Science Monitor*. The following item was published in Neal O'Hara's column of the Boston *Traveler*: "Another myth in smithereens: Although the Bible is popularly supposed to have been the first thing printed by

Gutenberg after his invention of type, Douglas C. McMurtrie, big shot of the Int. Ass'n of Printing House Craftsmen, reports: 'After painstaking research we have found that Gutenberg produced at least 17 successive editions of a Latin textbook, the Donatus, before he began work on the Bible. It stands to reason that the first printed Bible could not have reached its stage of perfection had it been the first printed book.'"

The following was taken from the *Christian Science Monitor* of March 23: "Douglas C. McMurtrie is a typographical expert. His hobby is printing, which is the recorder of history. He originated the project to record all the early American printing from the beginning of the press in the United States through 1876, and, as he expected, much that was new has turned up and many gaps filled in. Mr. McMurtrie, director of typography of the Ludlow Typograph Company, traces his interest in printing back to college days and his editing of the yearbook at Mass. Institute of Technology. In the years since, his books about printing have included 'A History of Printing in the United States,' 'The Book: the Story of Printing and Bookmaking,' and 'The Beginnings of the American Newspaper.' He has also designed a number of widely used type faces.

"In 1936 Mr. McMurtrie journeyed to Nashville, Tenn., to address the Southern Historical Association. He told the historians how he had discovered in his exploration into the history of American printing that knowledge of facts on the subject was scarce. Dr. Luther H. Evans, National Director of the Historical Records Survey of the WPA, was present and asked Mr. McMurtrie what could be done. Right then was born the American Imprints Inventory, a project to find, describe, and note the location of a copy of every discoverable book and pamphlet printed from the beginning of the press in America through the centennial year of 1876." — HERBERT S. CLEVERDON, *Secretary*, 46 Cornhill, Boston, Mass.

1911

Don Stevens, II, President of the New Jersey Taxpayers' Association, played a very large role in his state's gubernatorial primaries in May, relying on the plank in his association's platform which read: "We will oppose by name any man who has worked against economy and for new taxes." Accordingly, he worked against former Governor Harold G. Hoffman. Don's final blast was: "A leopard cannot change his spots. A camel cannot lose his hump. For five years in and out of the governor's office Mr. Hoffman has left a trail of firm and lurid statements in every nook and corner of this state that economy is a fetish and that we must have new taxes." Hoffman lost.

In the Boston *Post* of May 10 I noticed a two-column cut of a man holding a twisted wrench, and he looked familiar. Sure enough, under the title, "New Kind of Tempering," was the subhead: "Vice-President Zimmerman, of the U. S. Steel, shown with wrench which will

bend but won't break under pressure. This is produced by a new tempering process and is expected to save workmen from injuries." It was a nation-wide release, so doubtless many of you saw it. — I wrote to Zim and he replied that the matter which prompted my note was an outburst of publicity following an address he made to the stockholders' meeting of the United States Steel Corporation on May 6. "That was just the beginning of a series of what I call troubles," he added, "for on May 9 I spoke at a meeting sponsored by the University of Rochester, part of a three-day clinic on 'New Frontiers in American Life,' and told why the corporation indulges in research and technology. The talk was broadcast over the Blue Network. . . . My schedule called for me to speak in Cincinnati at the annual banquet of the National Association of Purchasing Agents on June 3 and therefore I could not see you on Alumni Day. . . . Please do not get the idea that the Steel Corporation has gone into the windmill business; it just happens that these public appearances became concentrated within a relatively short period of time."

Zim enclosed with his letter a copy of the paper he presented at Rochester, entitled "Steel at the New Frontiers." After covering extensively the technical phases of the steel industry, he said that it is "unthinkable that any enterprise can be broadly successful which does not pay attention to human relationships and social responsibilities," and finally closed with this significant paragraph: "The most interesting frontier which has challenged the efforts of men and women throughout the ages is the oncoming generation. It will always be a frontier. Here are virgin minds to be tilled, mental pathways to be blazed, seeds of thought to be sown, and development from the primitive to the cultivated to be accomplished. In the men and women of tomorrow, each older generation, co-operating with the formal institutions which have been established to assist with the task, will ever find a work to do along new frontiers in American life." — He also said in his note that he and Bob Haslam, X, are now living in the same town, Short Hills, N.J., and that they get together from time to time, "most often at church." Bob and Mrs. Haslam have returned from a long and interesting tour of the South, so I wrote to Bob for an account of the trip, but no letter has yet come; hence we'll have to wait till fall.

From the Dedham *Transcript* of April 26 we learned that Cal Eldred, VI, vice-chairman of Dedham's finance committee last year and a member of the salary committee, was elected chairman of the new finance committee. Commenting on Cal, the story said: "The new chairman has for years taken an active interest in civic affairs of the community. He is a former town meeting member and has served on several town committees including the salary committee appointed six years ago. Mr. Eldred, who resides at 495 Washington street, is mechanical

1911 Continued

superintendent for Hollingsworth & Vose Co. with paper mills at East Walpole and West Groton. He is a member and past president of the Plant Engineers Club of Boston."

Thanks a lot, classmates, for the vote of confidence which continues my term as class representative on the Alumni Council for another five years. It also was a distinct pleasure to accept appointment by the M.I.T. Alumni Fund Board as Class Agent for '11 — you'll hear from me from time to time and I expect prompt and effective co-operation. Added secretarial duties of O.B.D.: election May 20 as secretary, New England Hotel Sales Managers' Association, for one year.

The American Society of Mechanical Engineers spring meeting in Worcester the first three days of May was splendidly attended by Tech men from all sections. It was particularly nice to see John Romer, V, and his wife. John is chief chemist for the Babcock and Wilcox Company at its Barberton, Ohio, plant. He was recorder for the session on boiler feed-water studies. — We learned from *The Tech* earlier this month that one of our junior '11 men — Franklin P. Seeley '42, son of Nat Seeley, II, was elected to the Beaver Club, junior-class honorary society. The club elects each year the outstanding men in the sophomore class to its membership. Frank is taking the applied physics option of Course VIII.

We regretted to hear that Bala P. Mathur, VI, had died January 26. This information came from the post office in Yakootpona Hyderabad, Deccan, India. Mathur was an interesting chap as a student and stayed with us for nearly three years, after which he was with General Electric Company for several years before returning to his native India. George Garnsey, V, has returned to his home, 19 East Fulton Street, Gloversville, N.Y., after a number of years on the staff at St. Mary's Hospital, Mayaguez, Puerto Rico. — A complete story of '11 and Alumni Day will appear in an early fall issue. Set aside *now* the week end after Memorial Day week end next year, for 1911's thirty-year reunion will take place from Friday, June 6, to Monday, June 9, culminating in Alumni Day at the Institute that Monday. — Make up your mind soon just how much you want to contribute to the Alumni Fund; it is understood that all of you who read these notes will be subscribers. — Write to Dennie! — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Worcester, Mass. — JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

1912

We are slightly embarrassed to report that only two members of the Class could be mustered for the annual banquet of the M.I.T. Club of Northern New Jersey, which was held in Newark on May 2. These two members were Harold H. Brackett and Robert J. Wiseman, both Course VI. We did a little bit better with our class luncheon in New York on May 7, when a party of six met at the McGraw-

Hill Building. Present were Randall Cremer, I, Page E. Golsan, VI, Edward M. Mason, VI, William A. Rhodes, VI, Cecil B. Vaughan, II, and David J. McGrath, I. Letters were received from W. C. Bird, I, F. J. Osborne, VII, W. G. Cole, I, and a call from N. A. Hall, VI, all expressing regrets and good wishes.

Page Golsan has furnished us with a copy of a letter from David Dasso, II, now minister of finance of his native Peru: "You were very kind in expressing your congratulations to the administration for my appointment, and I wish to extend to you my heartiest appreciation. There are several Alumni of M.I.T. in this vicinity, and they arranged for a special party in celebration of my appointment." The new minister was born in Lima in 1891. A student at the School of Engineers, Lima, and later at the University of Illinois, he was graduated as mechanical engineer from the M.I.T. After an apprenticeship in one of the leading automobile factories of the United States and an extended European tour, Mr. Dasso returned to Lima to take over the management of El Vulcano, one of the principal foundries in Peru. In this and other industrial enterprises, he served as manager and director for twenty years until 1932, when he was appointed by the famous Swiss engineering firm of Sulzer Brothers, Ltd., as their representative in the United States, in which capacity he remained until 1939. During this period he was sent to Argentina to organize the Sulzer agencies in that country. In 1936 the American Locomotive Company of New York made him a vice-president to direct their Diesel motors section, an appointment which he filled jointly with his position with Sulzer. Mr. Dasso was for many years one of the prime movers of Peru's present-day industrial development. His record along these lines speaks for itself and his appointment as minister of finance has been generally applauded by those familiar with his capacity for work and his personal integrity.

It is with extreme regret that we chronicle the passing of Charles V. Reynolds, XI, at his home in Canton, Mass., on May 13. The *New York Times* carried the following story:

"Charles V. Reynolds, construction engineer and contractor, banker, president of several fuel concerns and a member since 1933 of the State Emergency Public Works Commission, died of a heart attack . . . at his home. . . . He was 49 years old. Mr. Reynolds was a trustee of the Massachusetts Hospital School. . . . He also had served as president of the New England Road Builders Association. He served three years as engineer for the Boston Transit Commission and was a director of the Norfolk County Trust Company . . . chairman of directors of the Godfrey Coal Company of Milton and president of the Reynolds Brothers Construction Company, Deane Coal Company of Canton, Sawtelle Coal Company of Readville, C. I. Leavitt Coal Company of East Weymouth and the South Shore Coal Company of Hingham. Mr. Reynolds

was a member of the Clover Club of Boston, the Blue Hill Country Club, Madison Square Garden Club of New York, the Charitable Irish Society of Boston and the Knights of Columbus. He leaves a widow, a mother, four children, two brothers and four sisters." — Edward Montgomery is now located at Fort Sam Houston, Texas, having recently been transferred from Langley Field, Va. — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, McGraw-Hill Publishing Company, Inc., 330 West 42d Street, New York, N.Y.

1913

L. H. Lemaire, III, is, or was, division manager of Cletractor Company, Melbourne, Australia. C. W. Loomis '16 kindly sent this paragraph from Lammie's letter written early this year: "My two sons, by the way, are growing up fast: one is in fourth-year law at Melbourne University, and the other is preparing for the army via Duntroon, our West Point. Strange to say my steps will shortly be directed overseas in a staff capacity with the second Australian Expeditionary Force, and so next time you year from me will be from a spot far removed from this peaceful haven. Why Master Hitler dragged the world into this horrible tangle, I don't know, but I am convinced that after the happenings in Czechoslovakia, Poland, and Finland, we are not fighting for selfish imperial motives but for the preservation of civilization and the high moral standards which the United States also claims as the basis of international relationships. . . . — If ever a man did his bit, here is such a man. Lammie volunteered in the first Australian Expeditionary Force and was in the thick of the Dardanelles fighting.

Ward Lovell, II, is with the Sandusky Cement Company at York, Pa. George Clark, II, is chief engineer at Formica Insulation Company, Cincinnati. Al Ranney, I, is with United States Engineers, Galveston, Texas. Mons Gagnon is a consulting industrial management engineer at Birmingham, Ala. Robert Leshner, IX, is a consulting engineer in Washington, D.C. Tom Lough, I, is vice-president of Thomas H. Stephens, Inc., Detroit. Jumbo Mahoney, V, is president of Green Mountain Distillery, Burlington, Vt. Mayo Tolman, XI, is director for Iowa's division of vital statistics, at Des Moines. Bob Weeks, VI, is general engineer, National Youth Administration for Pennsylvania, at Philadelphia. — FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 784, Pawtucket, R.I.

1914

Another doctorate to a '14 man! The University of New Brunswick (Canada) on May 16 conferred an honorary degree of doctor of science on Earle O. Turner, I. The citation was so descriptive of Turner that it is well worth noting. It read: "Throughout the world, wherever Civil Engineering flourishes, the Massachusetts Institute of Technology is mentioned

1914 *Continued*

with respect. Today we are to honour an alumnus of that Institute, who has among us added no little lustre to its reputation by his knowledge and zeal. It is characteristic of a good teacher that he does not merely give instruction in the principles of his subject; Earle Oliver Turner has inspired his pupils with the same love of science as stimulates him. Consequently not a few of his pupils have proceeded to the same institution whence their professor himself came, and have gained reputation both for themselves and their preceptor. Further — to his enthusiasm as a teacher he has added the citizen's sense of responsibility, for he is not merely concerned how to teach us to build roads but also how to use them. Wherefore both as professor and as citizen he is rightly summoned to accept the honour he has earned so well."

The Alumni Fund is off to a good start, and '14's share in it is assured with the appointment of Ross Dickson as Class Agent. If you have not joined, you will not receive *The Review* next year, as there are no longer any Alumni Association dues. A \$5.00 contribution places you just where you were under the dues system. Everything above that aids the Institute. Let '14 keep up its quarter-century record of achievement. — Dean Fales was one of three judges in a recent technical contest dealing with maintenance work on truck fleets. — H. B. RICHMOND, *Secretary*, General Radio Company, 30 State Street, Cambridge, Mass. CHARLES P. FISKE, *Assistant Secretary*, 1775 Broadway, New York, N.Y.

1915

I should like to take this occasion to comment and thank all of the committeemen who gave so unstintingly of their time and expense in working to make the twenty-fifth reunion a success. An early issue of *The Review* next fall will carry a detailed story of the reunion. — Ken Boynton said in his recent letter that between the middle of March and the middle of May this year he had flown 7,500 miles in eleven different countries. He started from New York, went to Mexico, Central America, across to Colombia, then to Miami via Jamaica and Cuba, then across to Brownsville, Texas, and back to Mexico City. It looks as though Ken is Jerry Coldwell's rival for flying honors.

Jerry planned to be with us but at the last moment sent the following letter from the West Coast: "Once again I am going to be at a place where I should prefer not to be, and that is out here the first part of June. I have been commuting between Los Angeles and New York for the past three months, making the trip every two or three weeks. . . . When you boys are amusing yourselves at the Cape, I shall be here, doing anything but playing. I am very sorry to have to miss the party, but this job is one of those things that have to be watched continuously as too many things are apt to happen in too short a time. I don't like Lower California at all but manage to pass the week ends on the beach at Long

Beach or in San Francisco, a much better town from my point of view. Of course, some week ends are spent on the plane going to and from New York, but with good luck the trip is made overnight. I've only had two bad trips in all I have taken this year. . . ."

You will recall that at our twentieth reunion, Doug Baker came from Paris. We all missed him this year. His letter, written April 30 from London on a typically fascinating foreign letterhead, said: "Right up until September 4, 1939, I was so sure of being settled for a few years that I even acquired a farm in Vermont, since I have a large enough family to run my own summer camp. On the date mentioned, however, I received a cable transferring me again to Europe, this time as acting superintendent of manufacture for the International Standard Electric Corporation. I have been here since the middle of September, but not in any one place for any length of time. About half the time has been spent in Oslo. It is a fine country, both in scenery and inhabitants. . . . For the time being, Norway is out of bounds for me, but I am expecting to spend the next few months in the Danubian Basin, with Budapest as headquarters." — Mrs. Baker later wrote that Doug had gone on to Budapest. He must be having an interesting and exciting time in Europe; we certainly hope he is safe.

On March 20, at the ninety-second annual meeting of the Boston Society of Civil Engineers, Henry E. Russell spoke on "Trends in Naval Construction as Developed from the World War and Present European Conflict." I once heard him talk at an Alumni Council meeting, and he is well qualified on this interesting subject. One of the lost-or-strayed men in the Class has been John Kelleher, who used to pal around with Francis Wall and Wayne Bradley. Wayne did a great job as a reunion committeeman, and mentioned John in his letter of May 21. "While in Chicago I called up our classmates there. I was able to reach only Andy Wardle and Orie Hall. Andy is busily engaged on Chicago's new subway, and Orie is working for the B. F. Sturtevant Company. I have finally located the trail of John Kelleher who is selling air-conditioning equipment in New York State. . . ."

Many classmates have asked me about Lucius Bigelow. I give you his letter: ". . . impossible for me to attend our twenty-fifth reunion. . . . I sincerely wish that it might have been possible for me to be there and share with you all the celebration of a quarter century of progress down life's highway. . . . I have a wife, children, a house, a lot, and a job. Beyond these most important things I have had reasonable success in my work of teaching and research in organic chemistry, together with no small amount of satisfaction in the doing of it. To be sure, I have had some trouble and I am sure that I could easily spend three times my salary if it were available. There is little doubt in my mind, however, that every member of '15 could say

the same." This ends the year's notes and to everybody my best regards and heartiest thanks for having "helped Azel." — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline, Mass.

1916

At the recent annual banquet of the Alumni of northern New Jersey there were present the following '16 men: Horace Bickford, Dutch Gaus, Art Caldwell, Bob Wilson, Jim Evans, Jim Ralston, and Dick Fellows. — Sam Ellsworth comes to the rescue of your Class Secretary with the following items: "My first contact with Tom McSweeney since 1916 took place about three years ago, when we met in the Superior Court in Northampton. We found ourselves on the same side of a water-damage case. . . . I have seen him on several occasions since that time and understand that he is quite active in building-valuation work, frequently appearing as an expert witness. — Alec Blair, XI, who left the Institute before graduation to enlist with the Canadian engineers, spends most of his time at Lake Placid, Fla., where he engineered the development of a private estate costing well over a million dollars. He and Mrs. Blair were in England last summer when the war broke out and had the experience of waiting weeks for passage back to the United States.

"Gordon Fair, now professor at the Harvard Graduate School of Engineering, is taking a sabbatical year. . . . He has been touring the South, mainly making a survey of rural sanitation activities. He has become one of the outstanding men in this country in sanitary and public-health engineering and has taken a leading part in the development of the graduate work in this subject at Harvard. Tom Berrigan is now principal engineer in the sewer division of the Metropolitan District Commission in Boston. Plans are being prepared for sewage-treatment works for the north and south metropolitan sewer systems, and Tom has taken an active part in the development of these projects.

"Just a few months ago I met Joe Duggan, for the first time since leaving the Institute. For some years he has been connected with the textile industry and is situated in Milford, Mass. We met in Post Office Square in Boston for just a few minutes. Had I not had an appointment elsewhere, I would have accepted Joe's invitation to drop in to a tearoom to talk over old times. I see Duke Wellington occasionally at water-works meetings. He is superintendent of chlorination of the New Haven Water Company. He attended a meeting recently to discuss the future of Course XI. In most universities now the sanitary-engineering degree is given only after a year of graduate study. The M.I.T. is one of the few places where such a degree is granted for undergraduate work. A committee of former Course XI men has been selected to collaborate with the Institute to explore this question. As for myself, I continue with my private practice of sanitary engineering in Boston and manage to sup-

1916 Continued

port a wife and two young male offspring, one seven years and the other eighteen months." — I. B. McDaniel is still in the Navy, working at the model basin in the navy yard at Washington, D.C. He called on Dina Coleman in Lexington, Ky., and remarks that there seems to be considerable conversation in the air about our big reunion in 1941. — JAMES A. BURBANK, *Secretary*, The Travelers Insurance Company, Hartford, Conn. STEVEN R. BERKE, *Associate Secretary*, Coleman Brothers Corporation, 245 State Street, Boston, Mass.

1917

The most interesting notes that have appeared recently are postscripts to those prepared by Ted Bernard. Here is word to Ted from Gus Farnsworth, written on the letterhead of Coverdale and Colpitts, consulting engineers at 120 Wall Street, New York City. You will recall that Gus was made a partner of the firm some time back: "... On March 28, I was in Seattle and had a fine visit, perhaps described as a double cocktail hour, with Neal Tourtellotte. Neal and I covered in a mutually informative and enjoyable manner the twenty-three years since we last saw each other. I was able to supply him with bits of news about a number of the classmates, derived largely from the twentieth reunion gathering. I am sure Neal is a hot prospect for a ticket to the twenty-fifth reunion and celebration. To my observation, both time and fortune have treated him very kindly, and he carries his third chin with great dignity and with minimum inconvenience. ..."

Horace Ford was royally entertained by Ras Senter in Texas. Ras has bachelor quarters that would make Dudley Bell and other benedicts envious, and apparently Ras has no intention of sacrificing them. — Clark Robinson, who designed the stage offerings at Radio City Music Hall for its first year, is reaching bigger and better fields. He is designer of the Billy Rose Aquacade at the San Francisco Fair. The tank frontage is 150 feet as compared with the proscenium of the music hall, which is 100 feet. All changes of scenery at the Fair are in full view of the audience, the sets being contrived to change mechanically when one act is over. A press of a button starts shifting of the scenery.

A far cry from dancing girls and aquacades is the work of Nelson Chase for the new Chapel of Our Lady of the Miraculous for the Oblate Scholasticate at Washington, D.C. He has recently completed a series of eleven murals, which are being shipped from his Belmont home. Chase has been working in conjunction with James C. Flaherty, IV, architect of the building. — RAYMOND STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass. PHILIP E. HULBURD, *Assistant Secretary*, Phillips Exeter Academy, Exeter, N.H.

1918

You have all had your notices about the Alumni Fund, and I know that our Class will not be at the bottom of the list.

I hope that some members of the Class were able to represent us at Alumni Day; I was not able to be in Boston and Cambridge at that time because school was still in session.

Our President and I are both very hopeful in regard to the gift of our Class at our twenty-fifth reunion. The notices had been out less than one month on May 16, and between \$500 and \$600 had already been subscribed. The following have sent in their checks or their pledges: Elbert H. Bancker, Eli Berman, Edwin J. Cameron, Robert T. Collier, Philip M. Dinkins, Edward S. Esty, Yale Evelev, Thomas S. Fogarty, William C. Foster, Edwin R. Harrall, Alan F. Howard, Paul H. Howard, Joseph A. Kelley, Garland Lufkin, Donald W. MacArdle, Waldemar S. McGuire, Edwin M. McNally, F. Alexander Magoun, Elwood M. Manter, Albert R. Mumford, Gretchen A. Palmer, Marvin Pierce, John R. Poteat, Clarence E. Richards, Arthur Smith, and Albert C. Walker. I hope that by the time for news in the fall, I will be able to say we have oversubscribed. Don't forget the gift is to be an electric organ, which will be a reminder for years to come of our loyalty to the Institute.

If any members of the Class are passing through Boston this summer, I shall be very glad to hear from them. I shall be at my old home at 51 Houston Avenue, Milton. As our President is to be in the West for part of the summer, I am in hopes of having much news in the fall. — GRETCHEN A. PALMER, *Secretary*, The Thomas School, The Wilson Road, Rowayton, Conn.

1921

Francisco L. Lazo, I, is a member of the firm of Lazo-Dehesa and Martínez, engineers and architects, Avenue Madero No. 1, Mexico D.F., Mexico. Prospective clients are referred to his professional card, appearing a few pages ahead of the notes supplement, which lists among his firm's activities: plans and specifications, examinations and reports, estimates and valuations, and consultants for power plants, public utilities, heating, ventilating, refrigerating, and industrial plants.

Clyde L. Chatham, VI-A, formerly assistant distribution engineer, electric distribution department, Public Service Electric and Gas Company, Newark, N.J., has been made assistant division superintendent of the Passaic division of the department, with headquarters at Paterson, N.J., according to a note in the May issue of *Electrical Engineering*.

To William C. Ready, I, our apologies for the verbal flaying of the last issue. Ink was hardly dry when a most welcome note arrived from Bill, in which he enclosed copious news clippings on his recent marriage and invited your chronicler to visit his new home at 12 Frost Street, Arlington, Mass. Alas, we regret the inability to expunge harsh words from the record! — Harold O. Bixby, II, and others of his ilk should take heed of the dire consequences attending failure to answer promptly our requests for news.

According to the staff at the Squier Laboratory, Fort Monmouth, Bix has returned to Washington from Manila, but nary a word from him to this effect. With this in print, maybe we can next report that Bix has finally answered our note addressed to the Philippines.

Some 297 members of the M.I.T. Club of Northern New Jersey enjoyed hearing Edwin Armstrong of frequency-modulation fame and Earthquake Magoun '18, author of "The Girl from Simmons and the Boy from Tech," at the annual banquet on May 2. Among the officers elected were Maxwell K. Burkett, VI, Vice-President; Fred E. Kowarsky, X, Assistant Vice-President; Ralph S. Westsen, VI-A, Regional Chairman; Sumner Hayward, X, Executive Committee; and your Assistant Secretary, Advisory Committee. Thirteen of the Class were present, including the five above and Chink Chatham, George Chutter, Pip Coffin, Asher Cohen, Bill Emery, San Hill, Bob Lockwood, and Bill Rose. We were honored to have San come all the way from Wilmington, Del., to be with us as he has done several times in the past. Bill Rose enumerated various and sundry threats anent Ray St. Laurent's long absence from the home town of P.O.N.

Your Assistant Secretary's home address has been changed to 215 Linden Avenue, Glen Ridge, N.J.; telephone, Glen Ridge 2-8517R. Members of the Class in the vicinity are invited to call, phone, or write via this or the office address below.

Other new addresses have been received from Arthur N. Doolittle, XV, Stony Creek, Conn.; Geoffrey J. Greenfield, X-A, Storrington, Pulborough, Sussex, Essex, England; Lieutenant Commander Howard R. Healy, XV, Naval Torpedo Station, Newport, R.I.; Ernest Henderson, XV, "Llanover," South Lincoln, Mass.; Orin Moe, Post Office Box 1782, Houston, Texas; Donald W. Randolph, II, 92 Shoreacres, Fenton, Mich.; Harold F. Stose, XIV, 1526 Parkside Boulevard, Toledo, Ohio; Eliot Underhill, X, 2616 Buchanan Street, San Francisco, Calif. — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, International Telephone Development Company, Inc., 137 Varick Street, New York, N.Y.

1922

Out of 297 in attendance at the annual banquet of the M.I.T. Club of Northern New Jersey, there were eighteen men from '22, thereby again carrying off first honors in class attendance. Those present were Coddington, Dandrow, Gill, Grady, Grover, Lippincott, MacDonald, Manshel, Munning, Nesmith, Powell, Spear, Stanley, Stone, Teeter, Trowbridge, Vilett, and Webster. — On April 6 was announced the engagement of Miss Dorothy Viets of Cambridge to Norm Randlett of Laconia, N.H. We have not yet been informed of the wedding day and ask Norm not to keep it too secret. — Our illustrious Eric Hodgins, publisher of *Fortune*, is

much in demand as a public speaker. The Class feels highly complimented that Eric was invited to speak at the three-day forum at the University of Rochester held on April 8, 9, and 10, of which the general subject was "New Frontiers in American Life."

On May 9 the Cambridge Chamber of Commerce celebrated Research Day with a banquet in Walker Memorial. Robert Tonon, President of Peter Gray Corporation, is third vice-president of the Cambridge Chamber of Commerce and is taking an active and important part in promoting Cambridge business. Among the guests of Bob and Mrs. Tonon at the banquet were Mr. and Mrs. C. Randolph Myer and the Secretary and Mrs. Grover. Randy vouchsafed the following information: Up until about three years ago he was superintendent of all the plants of the Whiting Milk Company of Boston. After the merger, Myer became works manager of David Whiting and Sons, Wilton, N.H., which had been affiliated with the Whiting Milk Company. Whiting and Sons are in the lumber business and sell building materials, oil, and farm machinery. They operate a number of large certified farms in New Hampshire and manufacture boxes, toys, milk crates, and so on. The Myer family residence remains in Cambridge, but Randy of necessity spends much of his time in Wilton. It is evident from his varied experience that one can find out something about everything by consulting Randy. — CLAYTON D. GROVER, *Secretary*, Whitehead Metal Products Company, Inc., 303 West Tenth Street, New York, N.Y. C. YARDLEY CHITTICK, *Assistant Secretary*, 77 Franklin Street, Boston, Mass.

1923

Alex Taller, director of research and planning and also purchasing agent for Gimbel Brothers, Inc., of New York, has, according to *Women's Wear Daily*, resigned to become development engineer with B. Cooper and Company of Jersey City, engineers and manufacturers. Taller, President of the Purchasing Agents' Association, has been with Gimbel's for approximately eleven years. — The Boston *Herald* carried a picture of Athans Spiliotis' bride, formerly Dr. Helen Harmand of Cambridge, whom he married on May 4 at the Greek Orthodox Church, Roxbury. — W. E. R. Covell left the Army in April to join a construction concern in southeastern Arkansas. Most recently he had been district engineer in charge of navigation and flood-control works on the Monongahela, Allegheny, and Ohio rivers, with headquarters at Pittsburgh. — HORATIO L. BOND, *Secretary*, 457 Washington Street, Braintree, Mass. JOHN M. KECK, *Assistant Secretary*, 441 Mount Prospect Avenue, Newark, N.J.

1924

A note from Anatole Gruenr says that Frank and Agnes Hecht have left for Bombay, India, where Frank will act in an executive capacity for the United Eastern Agencies, Ltd., a public utility managing company in eastern India. His

appointment is for three years, the last six months of which will be a vacation period. A week before sailing from San Francisco on May 19, the Hechts were fêted by classmates at a party at the Newark Athletic Club. — Jim Metcalf, widely known as a power engineer and economist, has been made manager of the Consumers' Non-profit Public Power Corporation, organized to acquire the Puget Sound Power and Light Company.

Frank LeBaron has been elected president of the New England Foundrymen's Association, after serving as vice-president last year. — Earl Frazier, who is vice-president of Frazier-Simplex, Inc., Washington, Pa., has been elected to fellowship in the American Ceramic Society. His interest in civic affairs is indicated by his election to the board of the Washington Hospital. — A recent letter from A. B. Rudd indicates that he has returned to the New York office of the International Telephone and Telegraph Company after several years in the Roumanian Telephone Company, preceded by other periods in Cuba and in Spain. — FRANCIS A. BARRETT, *General Secretary*, 50 Oliver Street, Boston, Mass.

1926

Within the Class there apparently have been no catastrophes, no marriages, no achievements, and no one in the lockup during the past month. There is, however, one bright spot and one scrap of information. Tom Green took pen in hand to rib the Secretary for remarks on the Class's expanding contours. In fact Tom sought to do something about the matter by sending along a sample remedy which he himself had found efficacious. He made the further happy suggestion, that at our next reunion we should have a Kodachrome show and offer a prize for the worst Kodachrome slide of the best-looking child, or boat, or dog, or hobby, or bald spot, or fully expanded contour of any member of the Class; in other words, a how-not-to-take-colored-pictures show. Tom apparently thinks that he has the prize all sewed up, but the Secretary, in looking over his own slides, found some that will give him a run for his money. Tom did one more thing which the Secretary greatly resents: He sent along a set of Yale class notes, with the implication that they provided an example of how class notes should really be written. The Secretary is doing his best in this present report to emulate the clipping which Tom sent.

Dave Shepard, I am glad to report, left London in good season and his address is now the Standard Oil Development Company, 26 Broadway, New York. — Thornton W. Owen (Moony he was to us) is to be our Class Agent for the Alumni Fund. This augurs well for our participation in this effort. — JAMES R. KILLIAN, JR., *General Secretary*, Room 3-208, M.I.T., Cambridge, Mass.

1928

It is with great regret and deep shock that we announce the death, on May 10, at the Vultee airport, Downey, Calif.,

of Mal McCarroll, outstanding '28 man and ace Paramount Newsreel cameraman. Mal and two others had been photographing a new Vultee training ship and were returning to the airport at an altitude of about 400 feet. At the same time, crack test-pilot Vance Breesee was bringing his plane toward the field for a landing, and because of sun blindness, got over the photographers' ship before he was aware of it. Breesee's right wheel struck the tail of the other plane, which went into a nose dive, crashed, and burst into flames. The three trapped men were burned to death before aid arrived. Mal had been head of the Paramount Newsreel bureau at Hollywood and had contributed many improvements to the art. Last year he was presented a cup in recognition of outstanding work in his field. We extend our sincere sympathy to Mal's widow, Mrs. Etheline McCarroll, and to his father and two brothers. — News has also arrived of the untimely death of Fred Wolf, on April 19, of pneumonia, after an illness of several months. The Class sends its expression of regret and sympathy through these columns to Mrs. Wolf. During the past several years Fred had been a patent lawyer in St. Louis.

Henry Buntschuh, XV, has been visiting in Cambridge. He is an optical engineer with the Keuffel and Esser Company, Hoboken, N.J. — Congratulations to Dick Hoak, who was married earlier this year and is now living at 249½ North Queen Street, Lancaster, Pa. — Our felicitations are also extended to Charles Newhall on the occasion of his recent marriage to Miss Gladys Brantley of Kite, Ga. Both Gladys and Watty are licensed pilots. Watty's father and mother have lived at Daytona Beach since Mr. Newhall's retirement after forty-five years as headmaster of Shattuck Military Academy at Faribault, Minn.

Speaking of fliers, Ben Kelsey has another son, named Peter. The first, Ben, Jr., is now four years old. Ben, Sr., is still located at Wright Field and is president of the M.I.T. Club of Dayton. — Morris Klegerman, XI, is coauthor of a recent *Engineering News-Record* article about a new high distribution tank at Batavia, N.Y., which is ranked as one of the highest large-capacity tanks in the country. — George Sabol is doing further research work in higher physics. — Richard Roth has one son and is practicing architecture with his father and brother. Last year Dick's firm put up New York's largest apartment building. — Leo Schoenbrun has two children and is doing decorating in Chicago and on the West Coast.

Bob Harris continues his prolific pace and has now established a small library of papers, of which he is either coauthor or sole author, on nutritional biochemistry, vitamins, and the like. He recently obtained a grant from the permanent science fund of the American Academy of Arts and Sciences to purchase a newly developed instrument for optical quantification of vitamin B, for the study of the daily vitamin B requirement of young and adult individuals. — Before coming to

5

1928 Continued

Technology, Bill Hall started radio station WCAX at the University of Vermont. Today WCAX has become the newest link in the Columbia chain; and today Bill is at the Institute working on the M.I.T.-C.A.A. blind-landing system.

Hats off to our classmate, Eleanor Pepper, IV. She's a prominent architect in New York and did the interior decoration of the Terrace Club at the New York World's Fair. The *World-Telegram* recently carried an interesting interview with Eleanor. — June marks the end of another of our perennial bachelors, for on June 18 Joe Parks married Miss Margaret Pettengill at Boulder, Colo. Bill Kirk, Bill Carlisle, Ralph Jope, and yours truly recently joined Joe in toasting the event, but Joe wouldn't tell us a word about the young lady.

Waldo Keyes has recently joined the Kimberley Clark Paper Company of Chicago. — Bus Ruch is working assisting Irving Krick, in the department of meteorology at the California Institute of Technology. That's a long way from the teachings of Professor Schell '12, but Bus seems to be happily married to the weather. He's living at 2244 North Craig Avenue, Altadena, Calif. — Bob Schildknecht has been appointed state architect and engineer in the department of public works for Ohio. He can be reached at Apartment 83 B, 2996 Neil Avenue, Olentangy Village, Columbus, Ohio. — GEORGE I. CHATFIELD, *General Secretary*, 6 Alben Street, Winchester, Mass.

1930

Our congratulations are extended to Ed Pritchard, VI-A, who was married in April to Miss Blanche Marion Allen of Pleasantville, N.Y. Ed is chief engineer of the United Cinephone Corporation in Long Island City. Another of our VI-A classmates, Joe Miller, has recently become associated with Thomas A. Edison, Inc., as design and development engineer. He is also teaching in the evening division of New York University and acting as a consultant in connection with patents.

Our permanent Class President, Jack Bennett, II, wrote a letter from Australia, which successfully hurdled the censor. He said in part: "... I am very sorry indeed that some 10,000 miles of land and ocean prevent me from getting back to the tenth reunion of the Class. Please extend my heartiest greetings and personal good wishes to all members of the Class. ... While you are all roaming about the golf course or the beer barrels, or both, we will be commencing our Australian winter, which, by the way, is a very pleasant time of the year here, provided you have plenty of warm underwear as an offset to unheated houses. With all the peregrinations that Tech men are wont to make, I am rather surprised that no member of the Class has ventured as far as Australia during the three years of my stay here. Should anyone be so tempted in the next few years, I should be only too glad, of course, to assist in any way possible his pursuit of business or pleasure in this country which, despite the war, still offers ample opportunity for both. ...

I am hopeful of returning to the States on my first leave and am sorry indeed that it was not possible to time the trip to coincide with our tenth reunion. ... — Jack's location is at Granville, New South Wales, and he is the secretary-treasurer of Goodyear's Australian company. — PARKER H. STARRATT, *General Secretary*, Bradley Park Drive, Hingham, Mass.

1931

Gil Roddy has passed along a card from Roy Chamberlain, announcing the formation of a new firm: "Rolf T. Michelsen, having retired as a member of the firm of Hatch & Wolfe, and Roy W. Chamberlain, having retired as a member of the firm of Crawford & Sprague, announce that they have formed a partnership for the general practice of the law and admiralty under the name of Michelsen & Chamberlain, with offices at 55 Liberty Street, New York." Gil is located at the Boston Manufacturers Mutual Fire Insurance Company at 60 Batterymarch, Boston.

An interesting article on the activities of Ed Sniffen was carried in the *Vermont Phoenix* at Brattleboro. It appeared in the column, "Neighborly Talk," by John Hooper, and we pass the following excerpts along to you: "Edgar Wellington (Ed) Sniffen stepped from eight years in a steel mill, where the temperature hovers around 125 degrees, into the more varied and rugged climate of a Vermont farm. To make the change more complete he swapped the feeding of molten metal to an open hearth furnace for the less strenuous occupation of feeding hay to eight nanny goats. When Ed Sniffen got sick of the city he went rural with a vengeance. Ed, his wife, and young son, Dickie, have been living on their West Guilford farm for a year, and revelling in it. ... We found Ed Sniffen in the 'maternity ward,' administering to the needs of three kids that had been born a few days before. These and eight nanny goats comprise the beginning of his herd. ...

"How did you happen to pick out goat farming?" ... 'Because it offers the challenge of an undeveloped market. ... After graduating ... I got a job with the Bethlehem Steel company. ... The more I saw of the steel business the more I itched to leave my white collar research end of it and get closer to the great open hearth furnaces themselves. After a while I persuaded my employers to give me a job as first helper on one of the furnaces. ... It certainly is great up here. ... Little did I realize a couple of years ago that I would get such a kick out of farming, not to mention sitting up all night presiding at the birth of a goat. You know that is quite an experience when you have never seen anything born before. I'll bet I lost 10 pounds when that first kid was born. ...

Certain members of the Class have apparently made strides in the radio industry. From the National Broadcasting Company we have received a biographical sketch of John N. Fricker: "John N.

Fricker shipped on a coastal oil tanker out of New York as an ordinary seaman, as soon as he had obtained his B.S. degree. ... Eight years later he was at sea again on the U.S.S. *Brooklyn*, not as a sailor but as an N.B.C. engineer assisting in the pickup from the scene of the *Squalus* disaster. It was an exciting assignment watching the great life bell sink and rise to rescue the men trapped on the ocean floor. Fricker joined N.B.C. as an engineer in 1933 after serving a two-year apprenticeship in a Baltimore station. With N.B.C. he has served in the studio group, in the field group, and in the television detail. His hobbies supplement his work, and he is an amateur radio fan and camera addict. Fricker now lives in Union, N.J., is married, and has one son, John Walter, five years old. ...

From the University of Cincinnati we have received an article relative to the activities of Robert Andreani as broadcasting manager with the Italian Broadcasting Company in Rome. Bob, together with his sister, Evania, and his mother, Mrs. Alice Ormsby Andreani, is active in broadcasting cultural programs by short wave to America. They speak on the short-wave programs of Station Rome 2RO from 1:30 to 3:00 A.M. in Rome (7:30 to 9:00 P.M., New York). Bob helped with the first American program inaugurated by the late Guglielmo Marconi, October 28, 1934. After a period of translating he became a regular announcer. From translators and stand-in announcers the young Andreanis have become full-time broadcasting managers. The EIAR, as the Italian Broadcasting Company is called, gives them wide latitude. It pays guest artists and furnishes most of the music, but the completed program is Bob's and Evania's responsibility. They put in about ten hours a day on it.

The Andreanis say they hold down sharply on propaganda. They give a world news review, it is true, supplied them by official agencies. In this they naturally present world events through fascist eyes. They also broadcast English translations of Mussolini's speeches and similar documentary matter. But selling Italy culturally is their chief aim. — After receiving his degree in aeronautical engineering, Bob was a commercial and stunt flier until a badly launched glider finished his career with a spinal injury.

In a recent issue of *General Radio Experimenter*, D. B. Sinclair presented an article on checking antenna power with the type 726-A vacuum-tube voltmeter. — Mario Caputo has sent in a brief sketch of his activities since leaving Tech. He is in Washington working as an architect for the Federal Works Agency. After leaving M.I.T., he was in private practice until 1934, when he went to Washington. He has also been doing work with private architects in Baltimore. He is a member of the Washington chapter, American Institute of Architects, and also a member of the Washington Society of the M.I.T. The latter, he states, has monthly meetings of good-fellowship, excellent dinners, and exceptional

speakers. He is the author of an article, "Value of Architecture as Part of the National Archives." Mario was married on June 1, 1935, to Miss Doris R. McGunagle. They have two sons, Brian Rogers and Louis Vincent.

Harry Kamy wrote: "... During that first year after graduation I had a number of temporary positions as structural steel draftsman, industrial draftsman, salesman, and freight traffic solicitor. In June, 1933, however, I became connected with the board of transportation, New York, as an assistant train dispatcher. This was quite interesting, and I stayed on that job until April, 1936. At that time I received a promotion to train dispatcher. Basically, this means that I am in responsible charge of the operation and the personnel in the assigned territory. The work is fascinating and at times quite fast moving. The only drawback is that because of seniority, I am working nights, that is, from 11:00 P.M. to 7:00 A.M. — I am still with the Officers Reserve Corps and now have a captain's rating in the engineers. For some relaxation I have been playing in the garden. I haven't seen many of our classmates. I did see Champlain some time ago, and he was still with the United Fruit Company, being kept quite busy traveling."

Mr. and Mrs. Richard F. Murphy of Charlestown have announced the engagement of their daughter, Frances Elizabeth to John J. McNiff. Miss Murphy is a graduate of the Girls' Latin School and the Teachers' College of Boston. She is a teacher at the Jeremiah E. Burke High School of Dorchester. John is associated with the Hygrade Sylvania Corporation as a research engineer. He has been with Hygrade since leaving M.I.T. — Allan D. Elwell was married on December 30 to Miss Isadore Goodnow Cutler in the Memorial Church in South Sudbury. Mrs. Elwell is a graduate of Smith College, having spent her junior year in France at Grenoble and the Sorbonne. She is a graduate of the Hickox School and has been associated with Bennington College and Amherst College. Mr. and Mrs. Elwell are making their home in Providence.

Mr. and Mrs. Arthur Erlandson of Belmont have announced the engagement of their daughter, Miss Catherine Erlandson, to Thomas E. Harding. Miss Erlandson is a graduate of Emmanuel College and has received degrees from the Sorbonne and Radcliffe College for graduate work in French. — From New York, we have heard of the marriage of Miss Mary Schiess, daughter of Mr. and Mrs. Karl A. Schiess of Beason Hill, Port Washington, to Frank E. Dame. Following their marriage, Frank and Mrs. Dame sailed on the *Nieuw Amsterdam* for a South American cruise. — Mrs. Daniel J. Morgan of Jamaica Plain has announced the engagement of her daughter, Miss Clare Faith Morgan, to Benjamin W. Steverman. Miss Morgan is a graduate of Regis College '38. Wedding plans are for early fall. — BENJAMIN W. STEVERMAN, *General Secretary*, 11 Glenland Road, Chestnut Hill, Mass.

1933

James S. Bell has moved from Germantown, Pa., to 8076 Wisconsin Street, Detroit, Mich. — Our best wishes go to John S. Patterson, who was married on April 13 to Miss Louise Bigelow Whipple of Waban, Mass. They are living at 1113 Hollywood Road, Linden, N.J. — The Malcolm H. Masters announce the arrival, on February 11, of a son, Stanley Hinman, who may join the VI-A's in 1962. — Cal Mohr is hard at work in Rome, Ga. He suggests getting after Course Secretaries and officers of the alumni groups for more news. Who will volunteer? — GEORGE HENNING, Jr., *General Secretary*, Belmont Smelting and Refining Works, Inc., 330 Belmont Avenue, Brooklyn, N.Y. ROBERT M. KIMBALL, *Assistant Secretary*, Room 3-102, M.I.T., Cambridge, Mass.

1934

Henry Morss, Jr., deserves our congratulations on a recent election to vice-president of the Simplex Wire and Cable Company at Cambridge, Mass. — Wallace Adams has recently accepted a position with the Moore Dry Kiln Company of Jacksonville, Fla. After leaving Tech, Wally took a course in air conditioning at the Industrial Training Institute of Chicago.

Roger Williams sent a letter from Norfolk, Va., telling of his wanderings since leaving school and, more important, of the birth of a son, David Henry, on March 8. He says: "... My own wanderings since 1934 have taken me, with the United States Engineers, from Boston to Cape Cod Canal, to Providence, R.I., to Norfolk, Va. From Norfolk, I took fourteen months' active duty with the Civilian Conservation Corps in New Mexico and since then have returned to the engineers at Norfolk. Am working on flood-control reports. I hear from two of the mates at least once a year. Johnny Hrones is at M.I.T., and Frank Milliken is in Salt Lake City with the General Engineering Company."

Congratulations go also to Arthur Rinehimer on his recent marriage to Miss Frances Louise Price, daughter of Mr. and Mrs. Frank Thomas Price of Bel Air, Md. — JOHN G. CALLAN, JR., *General Secretary*, 184 Ames Street, Sharon, Mass. ROBERT C. BECKER, *Assistant Secretary*, Chile Copper Company, Chuquicamata, Chile, S.A.

1935

Two more members of the Class are about to end their bachelor days: John Best will wed Elizabeth Harrison of Wilbraham, Mass., while Don Gutleben's fiancée is Anne Darling of Wellesley Hills. — That incomparable diver, Gene Nohl, broke into the news again by giving another lecture at the University of Cincinnati. Another classmate who made the papers is Fernando Gallardo. He and a Harvard grad are making names for themselves in the bull ring in Mexico. Ferd has been taking the part of a mator — just a quiet bit of relaxation.

Lars Anderson reports that he has seen several of the clan, including Jim Notman, Frank Parker, and Fuzzy Forsburg. He says that Paul Daley and Eddie Sylvester '34 are playing amateur hockey in Chicago. Lars was player manager for the Crescent Club in Swampscott, which had a successful season of sixteen wins in eighteen starts including a 4-1 victory over West Point. Jack Ballard joined the Bucyrus-Erie Company in South Milwaukee a short time ago. Sam Brown writes that Bob Lindenmeyr is lecturing two evenings a week at the Delehanty Institute. Bob Carr is married and now working for the L. S. Brach Manufacturing Company as their chief electrical engineer. Link Paige is in charge of statistical research in the Brooklyn Trust Company. Les Moffatt left Consolidated Aircraft and is now a stress analyzer for Glenn L. Martin. Art Hamilton has been promoted to the position of assistant chief engineer of the Peter Cailler Kohler Swiss Chocolate Company.

Dave Buckwalter, after wandering about in Maine, Connecticut, Arizona, California, Texas, and Utah, finally settled down in Texas. He now is with the American Smelting and Refining Company, having been in the research department until recently, when he was promoted to a department superintendent's job as a metallurgist. Jim Casale, having lost the aura of the "mysterious man of the Far East," is now working on geologic surveys and is once again looking forward to becoming an economic royalist. He hopes to be able to buy a car and invest in stocks. Bart Chapman was transferred by Remington Arms to their target and trap works in Findlay, Ohio. The move coincided with his marriage, and the two together involved some hustling. Bart is now engaged in design and tooling for a new trap together with miscellaneous process improvement and enjoys the work immensely.

Rumor has it that Paul Daley, Wes Loomis, Kay Rucker, and Bill Cross were in fine fettle at the Technology Club of Chicago dinner honoring President Compton. Johnny Ryan, Phil Magoun, and Elmer Szantay are reported to be running a den of iniquity on Chicago's North Side. Our informant does not say what the business of this den is, but we recommend that, when in Chicago, you get in touch with the boys. Fred Draemel is said to have had trouble trail running in the Sugar Bowl near Truckee, Calif., until he replaced his eight-foot jumping ski with more appropriate equipment. Your Secretary can vouch for the difficulty of using long jumping ski for ordinary trail running. The things are too long to handle on the curves. Charlie Debes reports that at his wedding Trow Leavitt was best man. Seems that Pete Weinert '36, who was a next-door neighbor to Charlie and Trow in Walcott, attended the wedding and sat in the fourth row. After the wedding Pete asked Trow where he had been all the time!

We understand Al Greenlaw provided Hal Dixon with a shellacking at golf last summer. Ham Dow has been griping

about not seeing much of Al McDonald, who works near by. Seems that Al is too busy commuting to Boston to see the flame. Fred Tone has left his job in Chicago and is now with the American Machine and Foundry Company in Brooklyn. Art Linn, Tom Graham, and Phil Johnston are among those who are about to add to the rolls of the Class of '60. We hear Jack Burton is fighting a one-man battle against the utility company in Providence. Sam Fox, Bob Landis, and Don Glover '34 are working together in the same department of Pratt and Whitney. Expect they are pretty busy fellows just now with all the aircraft orders. Mal Porter, we hear has, with great pains, developed a tremendous capacity for beer during his travels selling powder for Du Pont. John Lewis reports that Bob Carr, who lives next door to him, is a "very satisfactory neighbor."

We hear that Hal Bemis was placed in charge of Campbell Soup Company's promotional work and looks very prosperous. Lorin Presby has visited Mr. and Mrs. Darrell Root and, together with Reuben Haines '34, has been showing them how to play bridge. (The Roots might not admit the latter, however.) Rolly Morse has recently acquired a daughter. Art Haskins has added a daughter to his family, making the score one boy, one girl. Vern Steensland has added to his name a B.S. in accounting from Syracuse University. New Ph.D.'s in the Class include Jim Libby, Paul Gilmont (Goldberg), Howard Mason, Paul Panagiotakos, Leo Epstein, and Stocky Stockmayer, himself. Elmer Szantay, of Sinko Tool and Manufacturing Company (no "t") reports that Phil McGoochan has joined the organization recently and is being groomed for sales work. We hear that Jack Colby, who is with Johnson Service Company in Boston, has been playing lacrosse with the Boston Lacrosse Club. He has a new home in Wellesley Hills and a lakeside cabin in North Central, Mass., the latter being called Boozers' Bunkhouse. Len Wiener has, as a result or in spite of marriage, added thirty pounds to the avoirdupois since graduation.

The class survey should be issued during the summer or fall and will contain a great deal more information and statistics. We expect to print a few extra copies. Those of you who have not already ordered, and who want a copy, can still send in \$1.00. The extra copies will go first come, first served. — ROBERT J. GRANBERG, *General Secretary*, care of W. C. Voss, 9 Old Town Road, Wellesley Farms, Mass. RICHARD LAWRENCE, *Assistant Secretary*, 111 Waban Hill Road North, Chestnut Hill, Mass.

1936

Perhaps the most interesting letter we have is one written beneath the letterhead of the Fahnestock South Sea Expedition of the American Museum of Natural History. The second sheet is on paper from the Hawthorne Hotel, Salem, Mass. Knowing Laddie Reday's habit of

writing on any paper which happens to be handy, we were surprised to find that he really is on a natural-history expedition in the South Seas. I quote from his letter: "I'm lying in the chart house of a three-masted sailing schooner in the blue Pacific Ocean, off the island of San José, one of the Pearl Islands, about fifty miles from Balboa, Canal Zone. The island is, as far as we know, uninhabited. It looks wonderful — white beaches, lush green foliage, an occasional coconut palm, a banana tree or two, a small river emptying into the Pacific. Everyone is on shore but the cook and me; I have to stay and charge a group of marine Exide batteries — I am chief electrician — with a small Lister Diesel engine."

"How did I get here? Well, I got another raise from my company and a little more work. I found that instead of working in order to live, I was living in order to work. So I joined this expedition. We go from here back to Balboa, then to the Galápagos Islands, then on a thirty-day sailing trip to the Marquesas, to the Tuamotu Archipelago, Tahiti, Fiji, Samoa, New Hebrides, Santa Cruz Islands, Australia, and back. The expedition will take two years. The two backers, Bruce and Sheridan Fahnestock, have done a similar expedition before and wrote a book, *Stars to Windward*. . . . The purpose of this expedition is multi-fold — to get bird specimens for the Whitney Museum, to get records of original native music, to make hydrographic soundings by an echo device for the Navy, and to add to the knowledge of anthropology and entomology. As for myself, I go for the fun of it." — It sounds like so much fun that we are all envious of you, Laddie. Laddie seems to have all the good fortune — he writes that before he left on the trip he got engaged to a girl from Rockport.

Back to the humdrum of everyday existence, but still on the subject of girls, we have a letter from Andy Brisse, who writes: "Each time I read our column, I get sadder and sadder. Gosh, how this man Cupid mows them down. Fate certainly dealt me a nasty blow! As you know I've been transferred to Gary, Ind. and it's no joke. Even the *Ladies Home Journal* is amazed to find that eligible Gary girls are outnumbered by men three to one and pronounces it fertile husband-hunting ground. . . . I've been taken from the research division and put into the operating division in tin-plate manufacturing for Carnegie-Illinois Steel Corporation. At present I'm assistant to the division superintendent, Chicago tin mill division, and I'm learning all over again. . . . Received a card from Pete Weinert some time ago. It seems that he was running around inspecting equipment for the Universal Oil Products Company. You probably know that he is married, and returned last year after quite an extensive tour from Chicago to California, thence to Baton Rouge and on to Trinidad. Last time I was in Pittsburgh, I ran into Lea Spring, who has become very much interested in social

work, so it seems. This is remote from his Technology training in physics with which he began his work with me in the research laboratory. Ran across Goodwin deRaismes '37; he is with the engineering department of the American Can Company."

Responding to my plea for news, Dorian Shainin sent word that he started 1940 with a new position in the same outfit, Hamilton Standard Propellers. He is now assistant to the chief inspector and busy as the title is long. Back to the eternal subject of girls, he reports: "I'm still single, but, of course, not entirely still in the matter." Those of our Class who are still single seem to be worrying about becoming old bachelors — and I agree it's about time they started to worry about it. Dorian says that Robert Roethlisberger '37 is now working for Hamilton Standard and is also single. However, another Phi Mu Delt, Bill Cresswell, was very recently wed to Miss Rita Sullivan. Bill is working for Aviation Manufacturing Corporation in Williamsport, Pa. — Martin Gilman is all excited over his approaching marriage to Miss Mildred Halfmann. The wedding is scheduled for June 29 at eight o'clock with Ed Halfmann as best man and Dave Dale '35 and Arnold Peterson '37 among the ushers. The plans also call for a reception after the wedding at the Hotel Astor and a cruise through the Caribbean for a wedding trip. When Mart wrote to me, he had just returned from a business trip through the South, visiting the campuses of Lehigh, Duke, University of Virginia, Virginia Polytechnic Institute, University of West Virginia, and Pennsylvania State. At the Coast Artillery School, Fort Monroe, he saw William McNamee '37. Martin also reports that Arnold Peterson is working at the Institute while studying for his doctor's degree.

Another member of our Class who is beginning to worry that he will grow up to be an old bachelor is Brent Lowe. He recently spent a couple of Saturday nights with me, once when he was in town on business, and a second time on his way back from Detroit with a brand new automobile. This is quite a change from the J-1 which so many of us heard about. Brent figures that his new convertible will help him to find a girl so that he can join the trend of the rest of the Class. He is still working for the Auburn Button Works, which apparently makes all sorts of plastic articles, including buttons. He is an assistant to one of the division superintendents and is learning a lot about plastics. Brent says he heard that our Prexy, Jack Austin, is advertising manager of the magazine *Municipal Sanitation*, but lacking any direct communication from Jack, we can only print heresay. — The latest to feel Cupid's darts are James Stewart and Kaisley Blake. Stewart, who is now working for the Northern Industrial Chemical Company, will be married to Miss Winifred Ratcliffe of Jamaica Plain. Blake's engagement to Miss Dorothea Foley has been announced. An inspiration

1936 Continued

to these two will be the news that Mrs. Bill Hope presented Bill with a son on last February 3. Bill is living in Lewiston, N.Y., and works in Niagara Falls.

"Peter White '36, spends most of his time running back and forth between the network analysers of the General Electric and Westinghouse companies in Schenectady and East Pittsburgh. He is employed in power system studies with the Engineering Company of the Electric Bond and Share System." — Credit the *VI-A News* for the foregoing item. — Auguste Hershey, X-A, is working for the Standard Oil Company of Louisiana in Baton Rouge. — John Sylvester, II, is with the United States Navy at the Newport torpedo station. — George Robinson, X, is with Hart Products Corporation in Woodbridge, N.J. — Joe Fratus, I, is in Margaretville, N.Y., with the Duplex Construction Company. — Warren Eaton is employed by the Gulf Oil Corporation in Tulsa, Okla. — At the Barkley-Grow Aircraft Company in Detroit, Mich., we find Joe King, XVI.

A letter from the Secretary of the Washington Club reports the death, on February 18, of Dee Marre VanCott, IV, who was overcome by a fire at the Lord Fairfax Club, Alexandria, Va. The fire broke out at about three o'clock in the morning and the other occupants got out of the house all right. VanCott's death was apparently due to asphyxiation. He had been working with Raymond C. Snow, a Washington architect, on housing projects. — ANTON E. HITTL, *General Secretary*, 109 Shepard Avenue, Kenmore, N.Y. ROBERT E. SAWYER, *Assistant Secretary*, 55 Robinwood Avenue, Jamaica Plain, Mass.

1937

Bill Austin, who is with Westinghouse in Bloomfield, N.J., mentioned something about the M.I.T. Club of Northern New Jersey in his letter of May 1, but look as I would at the banquet in Newark on the next night, I couldn't detect him. In fact I could detect very few '37 men at the function. Jack Booton was there collecting tickets and money, and Roy Smith and I were giving what assistance we could. Max Gerson and Jerry Salny were the only others, as far as I could see. — Were there more? — Bill went on in his letter to tell more about his work: "Since leaving school, I've been with the York Ice Machinery Corporation in York, Pa., and in the Boston branch until January 12 of this year. At that time I came with Westinghouse for their Tenderay process. This is a process for the speed aging of beef by means of air conditioning and the Westinghouse Sterilamp. When I left school, I thought I was out of the meat business but here I am, right in it again. — Fred Altman is married and is living here in Bloomfield. On one of my trips to Detroit I met Jerry Webb, who is married. Before the summer is over I expect to hit Pittsburgh; Alton, Ill.; Houston and Vernon, Texas; and Peoria—Illinois again. So you see, I'm helping to keep the railroads and airlines happy."

Bill McCune, after much wandering from place to place, has taken on a wife; Miss Janet Waters of Fall River, Mass., became Mrs. McCune on April 19. Congratulations, Bill, and happiness to you both. Joseph Puffer and Miss Celia Lothrop of Medford have announced their intentions, and by the time you read this they may be on the road together. — Richard Ewert, who is at 212 North Grove Avenue, Oak Park, Ill., is now employed by the Illinois Gear and Machine Company, Chicago. He was married to Miss Harriet Hunter of Danville, Ill., at Danville on April 20. — WINTHROP A. JOHNS, *General Secretary*, 245 Hale Street, New Brunswick, N.J.

1938

The very unsettled existence your Class Secretary has led since last fall accounts for the complete absence of contributions by him to this column. While you may not have been aware of it, all the choice bits of news you have been getting on these pages have been due to the untiring work of L. Bergeson. We also suspect that many of the items have germinated in the fertile acquaintanceships of Fred Kolb. Thanks to both of them and to all others who have made their contributions.

Tony Smith, I, sent a news letter to the members of that noble Course in February. For the benefit of those who have not come by this news in one way or another, we shall quote parts of it here: "After graduation, Nick Barbarossa spent a year with the First Engineers, United States Army. At present he is with the United States Coast Guard as an inspector on construction work. He was stationed in Providence for about three months and was headed (middle of December) for Newport, R.I. Socially, he has made the acquaintance of many screwy people and a few morons, to use his words. No wedding bells here. — Russ Brown, as previously reported, left the Geological Survey in the middle of June, 1939, to go with the Metropolitan District Water Supply Commission in Boston, but on September 18 he received his civil service appointment with the United States Geological Survey. A card from Miami on November 16 told of his transfer to assist in ground-water studies in southeastern Florida. Never a dull moment.

"The last I heard (mid-November), King Coombs was still with the Tuller Construction Company in New Haven, laying a 36-inch sewer on piles under water in that fair city's harbor, but he was scheduled soon to leave there. He and Nick kept their letters only one day on the last time around. Bernard Elkin, long missing, has finally been accounted for. He is working for a construction outfit in New York and was occupied in designing cofferdams as to size of piling, strut spacing, and general layout. He was to take a civil service exam for junior engineer, grade three, on the city service. — On August 27, J. B. informed me that Jim Emery was still with the American Transit Association. — Tom Evans, since graduation, has been with the Dravo

Corporation. For the past few months he has been contractor's engineer at New Bethlehem, Pa., on the Mahoning Creek, where the United States Engineers are putting in a dam as part of the flood-protection program for Pittsburgh. He's looking for a blonde of definite specifications but not having much luck in the wilderness of N.B.

"A letter from Fred Forman says that he has been in his father's insurance agency as an inland marine underwriter, but don't let the 'marine' fool you. This underwriting provides protection for merchandise on shipment in any type of conveyance over land. He says he's found in one of the ranks of commuters from New Jersey to the Big City. — On April 15, John Glacken left the Massachusetts Public Works Department but very soon got a job with the engineering department of Cambridge, where he is designing sewers for the W.P.A. As far as I can see, he's the only one of us doing what he specialized in at Tech and is working in his home town. — Fred Klauck is with the Ithaca soils laboratory of the United States Engineers, southern New York flood-control district. They are building dams and levees and making channel improvements. As part of this work he was in Washington setting up a small field lab and making tests during construction of the new eleven-million-dollar airport there.

"Ed Martin, after a year with the Army along with Nick, is now in Denver with the Bureau of Reclamation as junior engineer in the design studies section. He is working almost exclusively on analysis of deflections, stresses, and the like, of concrete arch dams. He and Paul O'Connell met the Terrible Turk, Enver Muratzade, at a football game. After getting his M.A. in hydraulics at Iowa University, Enver is at present at the bureau, learning government technique by arrangement with the Turkish ambassador. He plans to stay there until August, see some more bureau projects, and then head for home. — Paul O'Connell started with the Tennessee Valley Authority, then moved to Quincy for work with the Metropolitan District Water Supply Commission in the field. Since mid-November he has been with the bureau in Denver. — Gus Rossano has been up to all sorts of things since graduation. He worked for two different constructors until May, 1939, when he was appointed engineer's assistant with the Board of Water Supply of New York. He was transitman on all the traverses near one of the new reservoir sites for the Delaware Water Supply project. Last summer, however, he was appointed as research graduate assistant in the civil engineering department at the University of Illinois. He is working for his M.S. in sanitary in connection with a new method of drying sludge.

"After working last winter for the bridge division of the Rhode Island State Highway Department, Jim Surprenant got a job in July with Merrit, Chapman, and Scott, on the Jamestown, R.I., bridge. At the first of the year he had just

1938 Continued

finished and wasn't sure of his next move. Toward the end he was promoted to something of a contractor's engineer. — Doc Thompson is with the Liberty Mutual Insurance Company in Boston as an underwriter. But it doesn't stop there. He's the only one to walk the plank, as Tom says, and now has as a family 'one wife, Sunny, one son, David B., and one Irish setter, Michael.' — Curt Torrance continues with the construction division of the public works department for Hartford. He is doing layout work and steel detailing for the large structures used in the city's sewerage system.

'Jack Wilson left the Boston Water Supply in mid-September and is now with the division of land acquisition, Bureau of Biological Survey. It is land surveying in connection with boundary work for game refuges. He's instrumentman, chief of party, and notekeeper, and is kept moving. He was in Calais, Maine, was to go to Maryland, Florida, North and South Dakotas. — As for myself [Tony Smith], I left the engineering department in Hartford in the last week of November. I am with the Richmond office of Stone and Webster, drafting, surveying, and doing detailing work. For the month of April three of us were farmed out to the Virginia Electric and Power Company to help their drafting department prepare material for a Securities Exchange Commission investigation.' Tony also reported that Mac Cross, VI-C, was a junior engineer in the system engineering department of the Virginia Electric and Power Company, and that Howie Banzett and Giff Griffin are both engaged and will probably take the big step in September. Frank Atwater continues with Fafnir Ball Bearing Company in New Britain, and to the best of Tony's knowledge no girls have been bothering him as yet.

Our most recent letter comes from John Mahoney, V: 'Elmar V. Piel is in the research laboratories of the Shell Development Company, Emeryville, Calif. He was engaged in chemical patent work according to the last reports. Working with him are John C. Carter '39, V, and Harry Sommer '37, X. — Gordon L. Foote, a graduate student in Organic Chemistry, expects a Ph.D. around November. Engaged; will work for Procter and Gamble in Cincinnati, Ohio. — Julius Kovitz is doing combustion analysis and is a graduate student in Organic Chemistry. He is engaged to Miss Sylvia Astor of Lexington, Mass., with the wedding date set for the very near future. — A. B. Levine is a chemist for the A-1 Beverage Company of Boston. Single.

'Jeanne Kitenplon is doing graduate work in Organic Chemistry. — Fred J. Viles works for Liberty Mutual Insurance Company of Boston, as research chemist on industrial hygiene and occupational diseases. Single. — Benjamin M. Siegel is a graduate student in Physical Chemistry. Single. — Anne Schivek was doing research in the biochemistry department, Harvard Medical School, and was to be with Leterle Pharmaceutical

Company, Pearl River, N.Y. Quite single. — Gerson Hermann is textile chemist for William Filene's Sons Company, Boston. Single. — Robert D. Flynn, IX-A, is an organic research chemist for Socony-Vacuum Oil Company. Single, in spite of rumors. Working with Bob are Winthrop Reed '39, X, and Fred Ray, X. — Joseph H. Klaber is a chemist for the Bay State Chemical Company, researching on leather finishes. Before that, he obtained a master's degree at Illinois, where, he reports, Ben Epstein '37, XVIII, and O. T. Voodhigula, I, are located. In a recent letter, Joe mentioned the marriages of Stuart Stearns '39, V, and Bob Campbell, VIII, the latter to Miss Winifred Culik of Detroit and Radcliffe. Bob is recording data, psychological and physiological, at the Columbia Medical Center in New York. — Harry B. Hollander of Sedgwick Road, Cambridge, is, according to Gordon Foote, editorial assistant on a magazine on fire prevention published by the National Fire Protection Association in Boston. Single. — Finally, I'm another one of the Class who hated to leave school, so am now a teaching fellow and graduate student in Organic Chemistry. Will be working at Du Pont's in Wilmington this summer and expect my Ph.D. in June, 1941. Single."

Joe Vallone, IX-B, writes that since last June he has been employed as an engineer, inspector, and surveyor on the six-million-dollar Cranston sewage disposal project. He believes that it is good for three years' work, after which the town is no longer entitled to rating of "the largest city in the United States without a sanitary sewage system." Joe tells us that Mike Cetti, VI-B, is teaching math at his home-town high school of Camden, N.J. — Betts Wunderle has won over all the beauty of Hollywood and, after a year without seeing the guy, went out there this June to marry Don Weir, IX. Don was sent there a year ago by the Eastman Kodak Company to learn the movie business from the shooting angle. He seems to have kept his mind on business pretty well and is still enthusiastic about music (Betts is an organist). We hope they have the best of luck and will be getting back in the East soon.

Jim Hess, VIII, gives the following news: 'I'm assistant to the metallurgist for J. H. Williams and Company in Buffalo. We make drop forgings of all kinds, mainly for the aircraft and automotive industries, and market our own line of tools. There are four of us in the department, the other two men handling all routine chemical analysis, inspection, testing, and micrographic examinations. But aside from those specific duties our department has either direct, or at least consulting, supervision of all the technical phases of production, control, research, and customer inquiries and complaints. That is where my job comes in, and it has all been the best kind of experience, with the added blessing of an exceptionally fine man for a boss. There are two other Tech men in the

plant: Walter Sherry '37, VI-A, the electrical engineer, and John Slosson '35, I, the plant engineer. My only news aside from the above monotonous report is my engagement at Christmas to Miss Jean Haas of Harrisburg, Pa. Further action tentatively planned for next fall. Meredith Wardle, XVI, is living with me. Kip is in the stress-analysis department at Curtiss-Wright and likewise chose the holiday season to announce his intentions to Miss Letitia Stimson of Miami, Fla., and Colby Junior College. — Harold Straus, II, is in the same department at Curtiss after having been in California with Douglas for a year. He reported Given Brewer, IX-B, to be sojourning there when he left in the fall. — I ran into William Burditt, XIV, at an American Society for Metals meeting. He is in the laboratory of Allegheny Ludlum Steel Corporation at Dunkirk, N.Y. Daniel Scott, XIX, is a metallurgist in the foundry of the same company here in Buffalo and has been a frequent caller on J. H. Williams and Company lately because he finds more use for our impact tester than I can.

'Ted Burke, XIX, is practically a neighbor of mine when he is home. Ted is just completing his initial training course with Youngstown Sheet and Tube Company. — Jack Chapin stopped in to see me one night, but he couldn't stay long because he had better plans centered about the young lady next door. For the record I can highly commend his taste. — I got a wedding announcement from Firm Weaver, VI-A, who married Lillian Emily Valdina of Dedham, Mass., on November 25, but he didn't say where he was working or what his address is. Maybe it's a secret! — Oggie Saunders, VI-A, dropped in early last summer on his way to take a position with Illinois Bell Telephone Company, and I tried to get in touch with him when I was in Chicago in October, but his mother said he was located in Springfield (I think) at the time."

Not long ago your Secretary also called on Jack Chapin, X, in Buffalo. Jack admitted, after a couple of beers, that the steel business is all right. Besides acting as assistant director of the Buffalo station of the Chemical Engineering Practice School, he is doing his master's thesis on a problem which has bothered the steel industry for some time — the measurement of high gas temperatures.

The engagement of Arnold Kaulakis, X, to Miss Marguerite Adams of Galveston, Texas, has been announced. They are to be married early in the fall. — A long letter came to your Assistant Secretary from Skip Calkins, XIII, who left the Bath Iron Works about a year ago to try his luck in God's Country (more specifically, California). Skip reports that he spent about six months with Consolidated Steel Corporation, Ltd., who are building some of the new C-1 ships, and then went to work for Douglas Aircraft where he's developing aircraft surfaces. Skip also states that

he's still trying to crack the yacht-designing game and has designed and nearly completed the building of a twenty-foot plywood sloop with a fir keel. It is somewhat similar to the Lawley 110, and can be sold for \$495; he expects to build four or five almost immediately.

Your Assistant Secretary was in New York recently, and things were happening at a pretty good clip. For instance, the night he got there, Paul Shirley became a proud father of an eight pounder, and then to top it off, a couple of nights later his apartment burned up, or at least a good part of it. — Another big event was the sailing of the S.S. *Rex* with Doug Esperson, X, aboard. He was bound for work in Paris. The farewell party was a corker, and it was there that we ran across Jay Auwerter, who is still busy editing for *Aviation* magazine. He had quite a little to report; for instance: in addition to Bob Robbins, Lew Allen, Bob Elliott, and Johnny Ford are all flight engineers on the Pan American Airways transatlantic clippers. — Dave Irving was married on June 26 to Miss Jean Richards, Wellesley '40, in Cleveland. Dave is with the Gruman Aircraft Company at Beth Page, Long Island. Jay also reported that Jack Phillippi was with Seversky in Farmingdale, Long Island, and that Dave Wright had recently received a promotion from the Standard Oil Company of New Jersey. — DALE F. MORGAN, *General Secretary*, 55 Pennsylvania Avenue, Mount Vernon, N.Y. LLOYD BERGESON, *Assistant Secretary*, 885 Beacon Street, Newton Centre, Mass.

1939

From Ed True, IV-A, came the following news: "One day in October I walked into the Boston office of the Concrete Steel Company — not knowing exactly what the business was — and I've been there ever since. The company produces reinforcing bars, bent and cut to order, which they sell to contractors. In effect they are subcontractors on reinforced-concrete construction. I was hired as a tracer but at the end of the first week was promoted to the rank of engineer, with a raise in pay. I was hired with two others to work on a Federal housing project, a temporary job to last about two months. After seven months, we are still on the project. Ah, yes: more interesting at the moment is the announcement on May 11 of my engagement to Miss Mildred Richenburg of Roslindale. — In the fall I will be on the staff at the University of Oregon, where I am to be assistant to the professor of construction in the school of architecture. During the winter I have kept in close contact with Bob Laird, who is managing to spend five days a week at the American Winger works in Woonsocket, R.I., and with Lew Orrell who seems to spend his week ends far from the Bethlehem Steel's Fore River shipyards."

From Gordon Pope, XV: "As you can see from the change in address, I'm now with a new company (La Forestal Ar-

gentina). I was working for Duperial, as you know, when this offer came along; La Forestal is the largest company of its type in the world, obtaining tanning extract from the quebracho tree. It has about 12,000 acres in the Argentine northern jungle and eight or nine factories. From now until I go home in 1942, I shall be assistant chief engineer at one of their northern factories, working principally on efficiency methods and control. The main purpose of my coming here is to learn the business, after which I hope to return to Buenos Aires as assistant industrial engineer over all the plants. — The plant I'm now in is really amazing — it's about 500 miles north of Buenos Aires in what is called the Chaco, right in the middle of the jungle. In this plant alone we employ almost 4,000 men, all the labor being Indian and Paraguayan. I speak Spanish all the time at the factory, and am actually getting away with it all right, I think. The town itself is completely self-sustaining in regard to food, electricity, water, schools, housing, and so on. Also, I have two servants, a man and a boy, who do absolutely everything for me.

"Saturdays and Sundays we have dances and movies at the club in the evening, and during the day are either riding, fishing, or hunting pumas, wild pigs, foxes, alligators, snakes, monkeys, wildcats, rabbits, parrots, partridges, ducks, and hundreds of other birds. I have a small parrot I'm teaching to swear in Spanish. In the mornings and evenings the weather is superb, but at midday the temperature goes up to 120 or 130 degrees, which requires pith helmets and whites all the time."

This forthcoming wedding of Ryder Pratt, XV, must be a mighty important affair, since the fourth announcement of it has just come in. The girl is Miss Elizabeth Scott of Oak Park, Ill. — Miss Helen Bean of Newton Centre announced her engagement recently to Ben Krause. Miss Bean was graduated from the Katharine Gibbs School last year.

Several miscellaneous "Pleasendpersonalnewsaboutyourself" cards have been returned. Course II: Joe Harrison is employed as a junior engineer by R. R. Donnelley and Sons Printing Company; Frank Hines is an assistant in Civil Engineering at the Institute and also is doing graduate work for an M.S. in Mechanical; and Earl Wilkinson is working in the laboratory office at the Corning Glass Works. From Course XV: Stan Johnson is in the student training course of the Carnegie-Illinois Steel Corporation, Clairton, Pa., his present position being observer in the metallurgical department; Ed Usher is assistant to the President of Howard Inspecting and Testing Laboratory, Inc., and is still single; and Sam Felix is with the De Laval Steam Turbine Company, Trenton, N.J., as a mechanic's helper on the test floor. He wrote: "Gordon Holbrook, II, works in the next room doing experimental work for the masterminds upstairs. If I had to put a handle on this stage of my activity, 'twould be labeled, 'Tech man

gets his hands dirty.' I'm anxiously awaiting the succeeding stage, 'Tech man gets a raise.'"

From among the electrochemicals, Charlie MacKinnon wrote: "Am a research chemist, electroplating department, R. and H. Chemicals Division, E. I. du Pont de Nemours and Company, Inc.; address: 21 Hyde Park Boulevard, Niagara Falls, N.Y. Single." — From Course X: Bob Arns is working in the manufacturing department of the Standard Oil Company of California; Al Ackoff is a research engineer with Westvaco Chlorine Products Company in Carteret, N.J.; and Al Schreiber is working for the Panama Canal as a student engineer, at the Miraflores Filtration Plant. He wrote: "I have been doing water analyses, both chemical and biological, and have also been analyzing many products that are used in the Zone. Sterling Clark is at the same plant doing similar work, while Verne Osmundson is employed as a student engineer with the office engineer of the Canal Zone."

Roy Haworth, XIX, left the Park City in early May to take a job with Ingersoll-Rand as a metallurgist. He started his new job May 6 in Phillipsburg, N.J. — George Moore, IV, said: "Working with Dale Frederick and John Paul Jones — building a house for Mr. and Mrs. Richard Morrow '36 in Westwood Hills, Calif. The firm built Kay Francis' home and remodeled the Clark Gable ranch among other residences in southern California." — Dick Robbins, also IV, is doing building construction work in the engineering department of the Shell Oil Company in Boston. — Dave Lindberg, VI, is in the process of performing one year's active duty with the regular Army. He participated with the first signal company, first division, in the first army maneuvers at Plattsburg last fall. — STUART PAIGE, *General Secretary*, Box 207, Greenwich, Conn. MORRIS E. NICHOLSON, *Assistant Secretary*, M.I.T. Graduate House, Cambridge, Mass.

1940

Wesley Van Sciver, Class Secretary in our senior year, is planning to start work with the Donnelley printing company; Dick Crossan is going with the Maytag Washer of Newton, Iowa; Bill Sweet, with General Electric. Bob Grosselfinger and Paul Bunke expect to start with the Texas Oil Company; Bill Schnorr, with the S. D. Warren Paper Company; and Ted Brush and Clifford Sackett, with the Chrysler Corporation. J. B. Titherington is going to Harvard Medical School, while Hurley Bloom is planning to take the Harvard Law School course. Scott Brodie is working with the American Viscose Company. Weinbrenner and Vanderpoel are both coming back for graduate work. John Dineen is going with the Martin Aircraft, while Owen Matthews and J. H. Moore are planning a future with the Aluminum Company of America. Willard Morrison is starting with the West Bend Aluminum Company of West Bend, Wis.; Dix Speas, who left in February, is with the American Airlines.

1940 Continued

James Ellis, III, will probably go to the University of Illinois for graduate work, and John Simpson is starting with the Standard Oil Company of Indiana. Dan Crosby tells us that a majority of the Course X fellows are coming back for graduate work. Paul Keitel is to work with the Union Oil Company of California, and Dan and F. H. Libman are to work with Congoleum-Nairn. Jim Fifield and Tom Creamer are working with the American Brake Shoe and Foundry Company. P. V. Bollerman is to work with Crucible Steel; J. R. Nichols, with Cleveland Graphite Bronze Company; and F. G. Stroke, with the Chase Copper Company. E. M. Wallace is going to Harvard Business School, H. L. Otto, to the M.I.T. Graduate School, while Leonard Weaver, E. A. Colson, and Judson Mead are all going into the Geology Department for graduate work.

Lawrence Benenson is doing city planning for Sugarman and Berger, architects of New York City; J. H. Boulger is working for the Salem Community House; and J. Martin Rosse, with the Diamond Match Company. R. C. Brown is with the Standard Oil Company of California, and Bearce is with Johnson Service Company. S. Card is to be with United Aircraft Company, and R. G. Fife is to work with Procter and Gamble. R. B. Hodgson and Phil Stoddard are with Ingersoll-Rand Company; W. S. Kather, with Merck and Company; R. Millett, with the Aviation Equipment and Export Company; and Joe Havens is to work with the H. D. Lee Company.

Jim Rumsey is starting with Du Pont; Phelps Walker, with Inland Steel; and R. N. Thompson, with Middlesex Products. Jorge Echarte is to start in his father's consulting and architectural

engineering office in Havana, Cuba. Paul Witherell is planning to begin work with Austin Construction Company about the first of August. Val deOlloqui is to work with Dravo Corporation in Pittsburgh. — Ted Brush seems to have been the first member of our Class to walk down the aisle after graduation. Ted was married on the sixth of June to Miss Mary Booth. Mrs. Brush is a graduate of the Wheelock School in Boston. — Any news which you as members of our Class can send me for these distinguished columns will be greatly appreciated. I may be reached through the address 915 Meadowmere, Springfield, Mo., or the one below. — H. GARRETT WRIGHT, *General Secretary*, Care of Worthington Pump and Machinery Company, Harrison, N.J. DAVID T. MORGENTHAU, *Assistant Secretary*, 2421 Country Club, Prado, Coral Gables, Fla.

ATTENTION *of* REVIEW READERS

THE TECHNOLOGY REVIEW is not published during the months of August, September, and October. This July issue, therefore, completes Volume 42. Readers who file their issues have a complete volume if they possess copies for the months beginning with November and ending with July. Volume 43 will begin with the November, 1940, issue, to be released in the mails on October 27. An index to Volume 42 will be available, upon request, by September 15.



Under the recently adopted changes in the Constitution of the Alumni Association, Alumni renew their subscriptions to The Technology Review by contributing to the annual Alumni Fund. Payments of \$3.00 or more a year to the Fund credit the Alumnus with the payment of annual dues to the Alumni Association and include his subscription to The Technology Review.

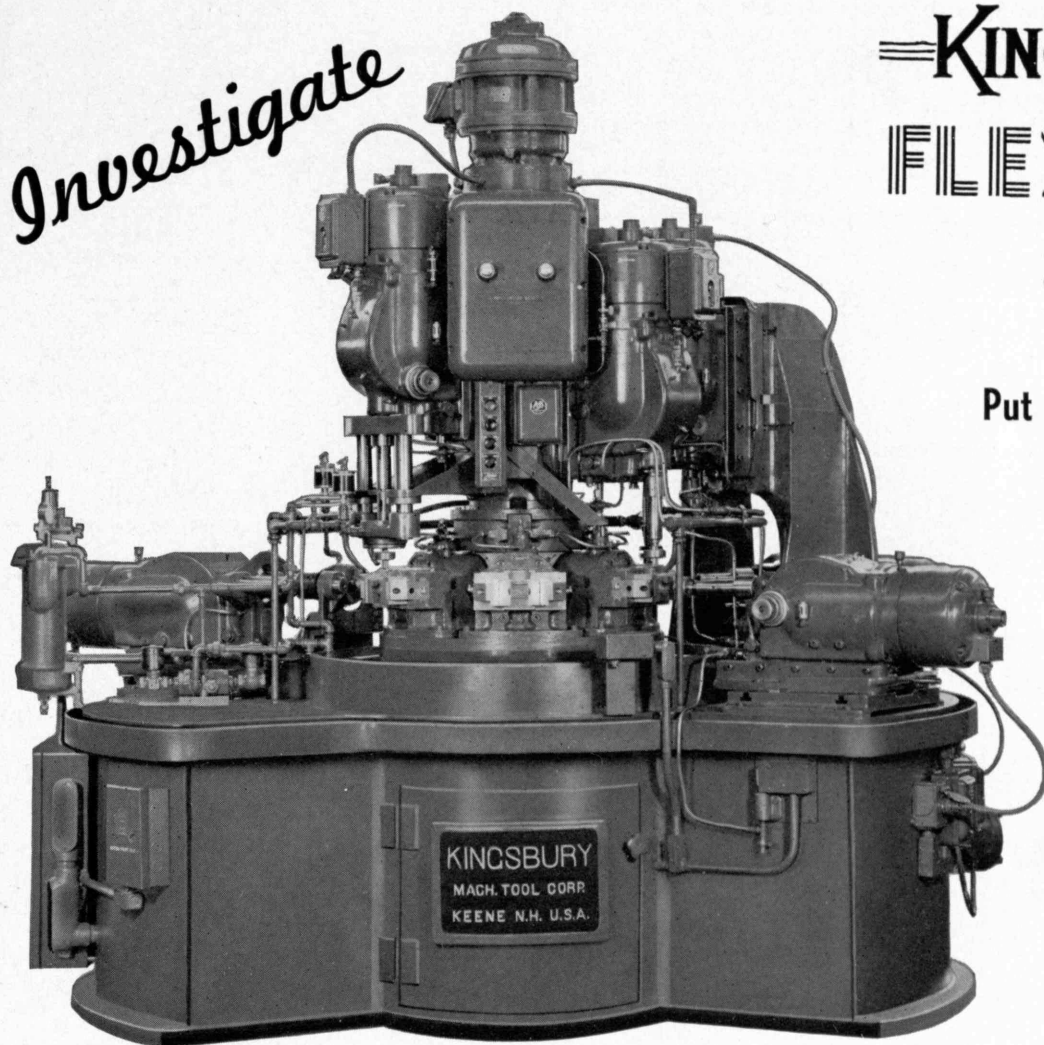
The surplus of all contributions after payment of expenses of the Alumni Association and the Fund is to be used for the benefit of Technology according to recommendations made by the Alumni Fund Board. Alumni have the privilege of designating one of these three specific purposes

for which they may prefer that the surplus shall be used: (1) undesignated, (2) continuing project (endowed professorial chair in honor of President Maclaurin, (3) student recreational facilities (further additions to the project begun with the erection of the Briggs Field House and the Alumni Swimming Pool).

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